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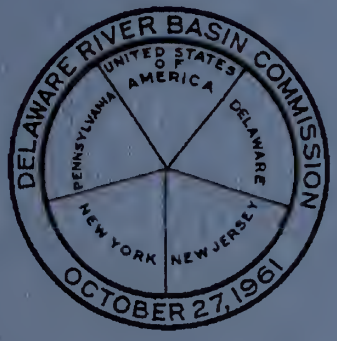
SUMMARY PROCEEDINGS

UPPER DELAWARE WATER QUALITY AND BIOLOGICAL CONFERENCE, APRIL 21, 1994

REPORT NO. 17 DRBC/NPS COOPERATIVE MONITORING PROGRAM



MARCH 1995

Report prepared by the Delaware River Basin staff, Gerald M. Hansler, Executive Director. Deborah J. Kratzer was the principal author.

The *Upper Delaware Water Quality and Biological Conference* was organized and sponsored by the Delaware River Basin Commission and the Delaware Water Gap National Recreation Area. The Pocono Environmental Education Center provided the facilities. Richard Albert, Elizabeth Johnson, and Deborah J. Kratzer conducted the workshop.

The information found in these summary proceedings was obtained before, during, and after the conference from the various conference participants, who deserve the credit for the success of the workshop. Warren Huff performed STORET retrievals. Maps were produced by Keith High, Jim Engstrom (Delaware Water Gap National Recreation Area), Don Hamilton (Upper Delaware Scenic and Recreational River), and Warren Huff (Delaware River Basin Commission).

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INTRODUCTION

The upper portion of the Delaware River Basin drains an area of over 4000 square miles. Within this three-state region are numerous high quality tributaries and the Delaware River. Two segments of the Delaware River have been included in the Wild and Scenic Rivers system: The Upper Delaware Scenic and Recreational River (UDSRR) and the Middle Delaware Scenic and Recreational River, which is within the Delaware Water Gap National Recreation Area (DWGNRA). Many agencies and organizations are concerned about the water quality in the Upper Delaware region and, therefore, conduct water quality monitoring programs.

The Delaware River Basin Commission (DRBC) and DWGNRA hosted an *Upper Delaware Water Quality and Biological Monitoring Conference* on April 21, 1994. The objectives of the monitoring workshop were:

- to determine the extent of water quality monitoring activities in the region draining to the Delaware Water Gap;
- to discuss biological monitoring activities in detail in order to exchange experiences,
- to increase personal and inter-agency communication and cooperation between the various agencies and groups conducting monitoring activities.

Fifty-one individuals from 23 agencies and organizations attended the workshop at the Pocono Environmental Education Center in Dingmans Ferry, Pennsylvania (see pages 13-14). Eighteen different water quality monitoring programs were identified and discussed during the workshop.

WATER QUALITY MONITORING

Representatives from each of the 18 agencies and organizations that monitor water quality in the region provided a description of their monitoring activities in terms of sampling locations, frequencies, and parameters. Summaries of these programs are included in *Appendix A*. A database of over 700 water quality and gage sites (excluding lake and effluent sites) was developed from STORET and information from the participants in the workshop. The tables in *Appendix B* and enclosed maps locate the current sampling sites in the Upper Delaware region for many of these agencies. Sites without latitude and longitude coordinates are not shown on the maps. This information allows water quality monitoring organizations to:

- be aware of additional sources of data and the areal extent of monitoring in the region;
- avoid needless duplication of efforts; and,
- avoid excessive disturbance of any one site in order to avoid degradation of the site, which in itself could bias monitoring information.

BIOLOGICAL WATER QUALITY MONITORING

The workshop highlighted biological monitoring as an essential component of water quality monitoring. Water quality affects the abundance, species composition, productivity, and physiology of natural populations of aquatic organisms. Because aquatic organisms live within the water, they integrate the quality of the water (including acute and chronic pollution, and the interaction of all water constituents) plus habitat over their entire lifetimes. As a result, they indicate water quality over a longer period of time than a single water sample, which represents an instantaneous measurement of water quality.

The macroinvertebrate community (identification and counting) is the most widely used biological parameter in the scenic rivers region. As such, it received the most discussion at this workshop.

Governmental agencies conducting macroinvertebrate monitoring in the Upper Delaware region use methods similar to the Environmental Protection Agency's (EPA) Rapid Bioassessment Protocols (RBP) (Plafkin et al., 1989) to evaluate the macroinvertebrate community. There are three protocols described in the RBP (see Table 1 for a brief comparison). Modifications are employed by agencies[1,2] to improve upon the RBP protocols, to save time and money, or to be comparable to historical data collection methods. These modifications include one or more of the following; using RBP II, but subsampling and identifying in the lab, rather than the field; using a smaller net or larger mesh size; different level of identification, particularly identifying the midges and worms to only family, but others to genus or species; different indices; and/or different control site or criteria methods.

Table 1: Basic differences among Rapid Bioassessment Protocols I, II, and III

Characteristic	RBP I	RBP II	RBP III
Personnel Required	one person	two people	two people
Sample or Subsample Analysis	whole sample	100 individual subsample picked in field	100 individual subsample picked in lab
Identification	in field to family	in field to family or order	in lab to species
Data Analysis	relative abundance	8 indices	8 indices
Conclusion	impairment/no impairment	severe/moderate/no impairment	severe/moderate/slight/no impairment

Table 2 summarizes the methods used by agencies in the scenic rivers region. Net sizes range from 18" x 8" to 4' on the diagonal, while mesh size varies from 500 μm to 1000 μm. Although the definition of "macroinvertebrate" includes those invertebrates which are retained by a U.S. Standard No. 30 sieve mesh (500 μm to 595 μm depending on width of mesh), some agencies use the larger mesh sizes to avoid the difficulties in identification of the smaller individuals.

Pennsylvania Department of Environmental Resources (PADER) was the only agency that collected supplemental macroinvertebrate samples in Coarse Particulate Organic Matter (CPOM, which is recommended in the RBP), but did not find it useful, and has discontinued it, according to Rick Shertzer. Most agencies sample only riffle habitats, except New Jersey Department of Environmental Protection (NJDEP), which composites samples from the three major habitats at each site (according to Al Korndoerfer), and the EPA's Mid-Atlantic Highlands Assessment (MAHA) program, which samples pool and riffle habitats and analyzes the samples separately. Maggie Passmore, of EPA Region III, presented clarification of the MAHA macroinvertebrate method. At each site, the stream length studied equals 40 times the width. Nine transects are established within the reach, and one kick sample is collected at each transect. The kicks taken where the transect happens to be in a pool are composited with all other pool samples for the site: Riffle samples are composited with all other riffle samples for the site. These pool

[1] New York Department of Environmental Conservation (NYDEC) developed their protocols before the RBP's were promulgated.

[2] The DRBC/NPS program conducted a study in 1984 to compare various collection methods and selected the kick net technique described in Frost et al., 1971 (Albert, 1984). The DRBC/NPS are currently reexamining their protocols to make them more compatible with RBP. (A study of comparability was conducted several years ago, but the results have not been completed. A three-year study to establish new protocols is being initiated in 1994.)

and riffle samples are then analyzed separately. EPA is using statistics to determine the effect of different numbers of kicks per sample, and if any different indices should be used for pool versus riffle samples. Rick Shertzer and Sherry Wills added that PADER samples only the riffle/run habitat for the qualitative sample, but also collects a sample composited from all available habitats and substrates to develop a comprehensive taxa list.

Natural seasonal variation occurs in the macroinvertebrate population, but research has not been done to quantify this variation. To take this into account, agencies usually sample during the same season every year. Season of sampling varies from mid-April to October, although most programs have a one to three-month window for sampling. Pike County Conservation District, which has collected macroinvertebrate samples at the same sites in spring and fall, has found little difference in the two seasons, according to Hannelore Schanzenbacher. Most programs sample once a year due to funding constraints, but suggest that greater frequency may provide better information.

Rather than identify every individual in the sample, a subsample is selected randomly in the lab. The various agencies select either 100 or 300 individuals or 1/8 of the sample for identification and counting. Monroe County Planning Commission has in the past chosen the 100 individuals in the field (the RBP II protocol), but Maggie Passmore, of EPA, in a technical assistance project with Monroe County, now suggests that they may be biasing their sample toward larger individuals by doing this. In the future, Monroe County will choose the subsample in the lab to avoid this potential source of bias. Al Korndoerfer, Rick Shertzer, and Margaret Novak, representing NJDEP, PADER, and NYDEC respectively, report that they have found, in individual trials, that the 100 organism subsample is suitable for this region and for their purposes. PADER also uses the whole sample to develop a complete taxa list. Al Korndoerfer, of NJDEP, described a study which NJDEP carried out to compare the previously used NJDEP "conventional" method to RBP II. Among other differences, the conventional method involved analyzing the whole sample, while RBP II requires only a 100 individual subsample. Essentially no difference was found between the two protocols, except that RBP II takes about 1/3 of the time to complete (six days versus 20 days per sample from collection to report). In a slight variation in methods, Margaret Novak explained that NYDEC usually subsamples 100 individuals, but where the "picture" is not clear, another 100 individuals are analyzed, and the results from the two subsamples are averaged.

Agencies and groups vary widely in their use of taxonomic level for identification, ranging from family to species level. Each level of identification of macroinvertebrates usually provides the same information (Plafkin et al., 1989), but with more precision as a shift is made towards species identification. However, the research has not been done to quantify the information gained by the increased time and costs of more precise (towards species) level of identification. NYDEC identifies to species level to gain maximum information through increased precision and additional insight on the type of impact, according to Margaret Novak. In contrast, Al Korndoerfer said that NJDEP, in the above-mentioned comparison of methods, found that by changing to family level identification, more sites could be sampled for macroinvertebrates, with little loss in the impact assessment information gained.

Macroinvertebrate identification and counts are used to calculate indices (sometimes referred to as "metrics"), or numerical representations, of the community's abundance, diversity, community structure, and/or indicator species. Because each index is calculated differently, each is sensitive to different stresses on the community. Therefore, most agencies and researchers recommend the use of several indices. The indices used by the various agencies and groups vary widely from the eight recommended in RBP II and III (see Table 3), with EPT being the only index universally utilized. The indices listed for PADER are those currently in use, however, PADER's evaluation of indices is still underway, according to Rick Shertzer and Sherry Wills. Bill Ettinger of RMC Environmental Services, Inc. commented that indices using ratios should be avoided.

Table 2: Comparison of macroinvertebrate sampling methods used in scenic rivers region

Agency	RBP used	Equipment	Number	Size Mesh	CPOM Sampled	Habitat Sampled	Frequency	Time of Year	Subsample Analyzed (individuals)	Level of ID
Plafkin et al., 1989	RBP I, II, or III	1 m wide x 1/2 m net	2 kicks	500μm	yes	riffle and CPOM, analyzed separately	once/yr	depends on project	100; other EPA studies 1/8 of sample	family, order or species (see Table 1)
EPA's MAHA	modified RBP III	1 m wide x 1/2 m net	1 kick on each of 9 transects	595μm	no	pool kicks composited, riffle kicks composited, & analyzed separately	once/yr	mid-April to June	100	species
NJDEP	modified RBP III	usually Surber; kick net; Ponar[3]	3 kicks, Surbers, or Ponars	800 x 900μm	part of multi-habitat	multihabitat; 3 major habitats composited	some once/5 yrs; others > once/yr; or one time only	early spring to late fall	100	family[4]
NYDEC	modified RBP III or I[5]	18" x 8" kick net	1 kick; 5 m in 5 minutes[6]	800 x 900μm	no	riffle only	once/yr	July to Sept[7]	100	species; except for screening sites
NYCity DEP				500μm						genus
PADER	modified RBP III	0 3 m wide D-frame net	2 kicks; at least 100 organisms	800 x 900μm	in past; not found useful	one kick from fast riffle/run, one from slower velocity riffle/run (composited)	once/yr	Aug to Oct	100	genus for most, midges to genus, worms to class, except *Tubificidae*, which are lumped as a family
	supplemental:[8]	3' x 3' kick screen	until no longer seeing new taxa			all habitats (composited), including near shore, rocks, logs, etc.			complete taxa list developed from whole sample	
Monroe County	modified RBP II	4' diagonal seine	2-3 kicks	1000μm	no	riffle/run	once/yr	Aug	100	genus
Pike County	modified RBP III	3' x 3' kick screen	varies; until 100 organisms collected	500μm	no	riffle only	twice/yr until '93; once/yr starting '94	mid-May & Oct; Oct only starting '93	100	genus for most; family for midges & worms
DRBC/ NPS	modified RBP III	18" x 8" kick net	3 kicks	533μm	no	riffle only	once/yr	June to July	whole sample, 1/8, or 1/2[9]	genus for most; family for midges & worms

[3] NJDEPE choses sampling equipment depending on what's appropriate for site conditions, according to Al Korndoerfer.

[4] Al Korndoerfer explained that NJDEPE uses family level identification to calculate indices, although genus or species are recorded if known.

[5] NYDEC's Margaret Novak explained modified RBP 1 is used for screening sites, which are expected to exhibit good water quality, therefore a less rigorous method is used to ascertain if the site is non-impacted or impacted.

[6] NYDEC's five meter travelling kick is done in five minutes, so that time and area sampled are consistent, according to Margaret Novak.

[7] NYDEC has discontinued May and June macroinvertebrate sampling due to occasional worm blooms that have occurred during these months (Bode, personal communication).

[8] PADER's supplemental method is used in this region to develop a complete taxa list using a method consistent with the historical data.

[9] The DRBC/NPS program analyzes whole samples unless the sample is abundant in organisms, which is common. In these large samples, subsamples of 1/8 to 1/2 of the sample are analyzed, with total organisms examined varying from 100 to 500, according to Richard Albert.

Table 3: Comparison of macroinvertebrate indices used in the scenic rivers region

Index	EPA EMAP	EPA RBP	NJ DEP	NY DEC	NY DEC[10]	PA DER	Monroe Co.	Pike Co.	NY Audubon	DRBC/ NPS
EPT	X	X	X	X	X	X	X	X	X	X
% EPT	X		X							
EPT/chironimidae + EPT		X					X			
Hilsenhoff biotic index	X	X	X	X		X	X	X		
taxa richness	X	X	X	X		X	X	X		
# individuals/taxa	X						X			
% intolerants	X						X			
% non-insects	X						X			
% chironimids	X						X			
% contribution dominants	X	X	X			X	X	X		
% model affinity (PMA)				X				X		
Shannon-Wiener								X		X
equitability						X		X		X
five mayfly species					X					
"appropriate" biomass (not too high or too low)					X					
elmids					X					
Simpson Diversity						X				
Trophic Simpson Index						X				
Density Index						X[11]				
community loss index		X					X	X[12]		
Jaccard coefficient of community similarity								X[12]		
Pinkham-Pearson community similarity index								X[12]		
scrapers/filtering collectors		X								
scrapers/scrapers+filterers							X			
shredders/total		X					X			

[10] NYDEC "screening sites;" see footnote 5.

[11] This index is under review and development.

[12] Used to compare paired sites upstream and downstream of sewage discharge sites.

Once the chosen indices are calculated, the interpretation of data involves comparison to one or more of the following: standards or criteria; ecoregion reference sites; comparing sites upstream versus downstream of impacts on the same stream; or comparing to historical data at the same site. Agencies within the scenic rivers region use a variety of these approaches. Margaret Novak explained that NYDEC calculates four indices (see Table 3), converts them to a common scale, and averages them to determine if a site is non-impacted, slightly impacted, moderately impacted, or severely impacted. NYDEC uses a different sampling method in enforcement cases, using impairment criteria based on upstream versus downstream comparison of sites (separate impairment criteria are applied to non-navigable and navigable waters). According to Robert Bode (personal communication), NYDEC did not find the ecoregion concept useful. EPA, on the other hand, is actively pursuing the definition of ecoregion reference sites, through the MAHA program, and through technical assistance to Monroe County (Monroe County Planning Commission, 1994). This method involves the identification of "best attainable" conditions for the region, and defining sites as a percent of the reference site score. Al Korndoerfer said that in 1989-1993, NJDEP sampled over 300 stations and selected 43 of these as reference stations. A New Jersey impairment score is given to each site, based on sites in this database (non-impaired, moderately impaired, or severely impaired). Alternatively, Pike County (Pike County Conservation District, 1993) compares a site to the historical data at that site, except on streams with wastewater treatment discharges, where data is compared upstream versus downstream. The DRBC/NPS program has historically compared sites with each other rather than use a reference or ecoregion approach. The DRBC's Special Protection Waters regulations for the Delaware River provide standards for the macroinvertebrate community as measured by three separate indices (Limbeck and Huff, 1990; DRBC, 1992). Future data will be compared to these standards, which were based on historical data from 1984 to 1989. In addition, DRBC may seek to establish criteria for the macroinvertebrate community in tributaries in the scenic rivers region, and may also adopt additional standards based on other biological parameters.

Roy Irwin of the National Park Service's Water Resources Division described a study done by the Ohio Environmental Protection Agency (ITFM, 1994). Ten different biological monitoring methods were compared, ranging from stream walk (which emphasizes education and yields the least amount of information) to multi-community analysis (periphyton, macroinvertebrates, fish, etc.), which is assumed to produce the most information. It was found that citizen monitoring was essentially the same as RBP I, except that no control sites were used by citizen monitoring programs. These citizen and RBP I methods have proven useful as screening techniques.

In the scenic rivers region, several citizen's water quality monitoring groups are moving in this direction. The NY Audubon Society's program began monitoring macroinvertebrates in 1993 using the Isaac Walton League method (according to Lori Danuff McKean), while the Brodhead Watershed Association (Edie Stevens) and the Delaware Riverkeeper Network (John Brunner) plan to institute RBP I or Isaac Walton League methods in 1994.

While macroinvertebrate identification and counting is clearly the preferred biological parameter for evaluating water quality in the scenic rivers region, other biological parameters are, or have been, measured:

- EXOTIC SPECIES: In addition to monitoring the macroinvertebrate community to assess water quality, PADER and NJDEP are both monitoring the introduction and spread of the zebra mussel, an invasive exotic species, which is a threat to the native aquatic ecosystem (Kelley, 1993). Both states rely on a network of agencies and utilities to make observations and notify them of the results. NJDEP has an electronic bulletin board system (BBS) for this purpose. The DRBC/NPS program has two zebra mussel monitoring stations, operated as part of the PADER program. This species has not yet been found in the Delaware River Basin.

- TISSUE ANALYSIS: NYDEC measures body burdens of toxics in macroinvertebrates once

or twice during the two year period of their Rotating Intensive Basin Study (a watershed is studied every six years for two years). The organisms usually used include net-spinning caddisflies (Trichoptera: *Hydropsychidae*) and crayfish (Crustacea: *Decapoda*). Concentrations in tissues are compared to provisional levels of concern (Bode et al., 1993).

Fish tissue is also an important parameter, although sampled infrequently at few sites, for determining the human health effects of eating sport fish. Rick Shertzer, of PADER, said PADER samples toxics in fish once per five or six years, while NYDEC's Robert Angyal said they sample once per three to six years as part of the fisheries program, and once per 10 years as part of the ambient water quality program.

- FISH COMMUNITY: James Kurtenbach, of EPA Region II, said that they intensively examined the fish Index of Biotic Integrity (IBI), but found that it was not as sensitive to water quality changes as the macroinvertebrate community. In addition, the ability of fish to move from place to place makes the IBI less site-specific than macroinvertebrates. Monitoring of the fish community in the scenic rivers region of the Delaware Basin is performed by the following: EPA Region II samples two streams in NJ; EPA Region III's MAHA program samples one tributary in PA; while NYDEC samples the fish community once every 10 years at various sites in NY. The PA Fish Commission, NYDEC, and NJ Fish, Game and Wildlife also sample sport fish annually (trout, walleye, and bass) by electroshocking to determine the effects of fisheries management actions on populations. Additional studies of the fish community (using IBI) and American shad populations are performed by the National Biological Survey and US Fish and Wildlife Service, respectively, although representatives of these agencies were not able to be in attendance at the workshop to describe these programs.

- MACROPHYTES: The DRBC/NPS program has conducted surveys of the aquatic macrophytes in the Delaware River and intends to expand this effort in pool areas (Baren, 1971; DRBC, unpublished; Kratzer, 1990).

- PHYTOPLANKTON: In the 1970's, DRBC routinely sampled phytoplankton in the river and selected tributaries but found that the low population numbers did not warrant continuing this monitoring (Baren, 1971; Rockel and Rose, 1982).

- PERIPHYTON: Al Korndoerfer stated that in the past, NJDEP sampled periphyton (diatoms) but found that it yielded little information beyond that gained from macroinvertebrates. In addition, the time spent in sample collection, slide preparation, and identification was far greater than for macroinvertebrates. As a result, periphyton is no longer routinely sampled by NJDEP.

- TOXICITY TESTING: NJDEP and NYDEC perform toxicity tests, which use various aquatic organisms (daphnia, mycids, and/or fathead minnows) subjected to constant conditions in sample water. Mortality, reproduction, and/or feeding are measured as indicators of the water's toxicity. NYDEC, in conjunction with the RIBS program, conducts chronic toxicity tests four times per year.

HABITAT ASSESSMENTS

All agencies attending the workshop agreed that habitat assessments are extremely valuable for the interpretation of biological data. NJDEP's qualitative habitat overview is also used to determine the three major habitats at a site from which to sample macroinvertebrates, according to Al Korndoerfer. Several agencies have also found that photos or even videos are very useful for documenting site conditions, and to assist in the interpretation of macroinvertebrate results.

Most agencies use RBP habitat techniques or a similar qualitative method. The RBP method (Plafkin el al., 1989) uses nine habitat characteristics, which are weighted to emphasize those that are the most biologically significant. Characteristics are assigned a number, based on condition descriptions of excellent, good, fair, or poor, then the total is compared to a reference station, which represents the "best attainable" situation. Table 4 summarizes several methods: Similar parameters are on the same line. Each method uses from nine to 12 of a total of 16 different habitat attributes. PADER, Monroe County Planning Commission and Pike County Conservation District use EPA's revised habitat method, in which parameters are all weighted equally on a scale of 1 to 20 points. Monroe County evaluates a stream reach 150 feet above and below a macroinvertebrate sampling site, while Pike County evaluates only the riffle from which macroinvertebrates are collected.

Table 4: Comparison of qualitative habitat evaluation methods

PW[13]	EPA RBP (Plafkin et al., 1989)	Barbour and Stribling, 1991	EPA Region 10 "Level I" (Hayslip, 1993)	EPA's revised habitat assessment method
1°	bottom substrate and available cover	substrate variety & instream cover	bottom substrate	substrate
			instream cover (fish)	instream cover (fish)
	embeddedness	embeddedness	embeddedness (pool variability in low gradient streams)	embeddedness
	flow/velocity	flow or velocity/depth	velocity/depth variability (canopy in low gradient streams only)	velocity/depth variability
		canopy (shading)		
2°	channel alteration	channel alteration	channel shape	channel alteration
		lower bank channel capacity		
	bottom scouring and deposition	bottom scouring and deposition		sediment deposition
	pool/riffle or run/bend ratio	pool/riffle (run/bend ratio in low gradient streams)	pool/riffle ratio (channel sinuosity in low gradient streams)	frequency of riffles (channel sinuosity in low gradient streams)
			width to depth ratio	channel flow status
3°	bank stability	upper bank stability	lower bank stability	condition of banks
	streamside cover	streamside cover	bank vegetation protection	bank vegetative protection
		grazing & other disruptive pressures	disruptive pressures on streambank	grazing & other disruptive pressures
	bank vegetation	riparian vegetation zone width	zone of influence (width of riparian vegetative zone)	riparian vegetative zone width

[13] Parameter Weighting emphasizes those habitat characteristics that are the most biologically significant. Primary parameters characterize the specific niche requirements, and have the most influence on community structure. Secondary parameters include channel morphology characteristics, while tertiary parameters evaluate riparian and bank attributes (Barbour & Stribling, 1991).

In addition to the qualitative habitat method, PADER measures certain parameters (listed in Table 5) quantitatively, or as percentages, according to Rick Shertzer and Sherry Wills. Although not currently used in the scenic rivers region, USGS National Water-Quality Assessment (NAWQA) (Meador et al., 1993) and EPA Region 10 "Level II" (Hayslip, 1993) methods are more extensive and include semi-quantitative (i.e. % cover) and quantitative measures. EPA recommends evaluation of 11 transects on a stream segment approximately 40 times the stream width. The USGS NAWQA program evaluates six transects on a stream reach either 20 times the stream width, or including two geomorphic channel characteristics (i.e. pool, riffle, pool, riffle). The parameters measured in these quantitative methods are summarized in Table 5.

Lisa Surma of Monroe County Planning Commission provided a discussion concerning the training for RBP habitat assessment. She stressed that everyone involved in Monroe County's habitat assessment receives the same training so results are comparable. Different people independently evaluate habitat, then the scores are averaged. In addition, photographs are taken upstream and downstream of the site.

The qualitative protocols in Table 4 for habitat assessment have the advantages of requiring far less time and providing a number to compare to the regional reference or "best attainable" site, but are subjective evaluations. Detailed quantitative protocols have the advantage of providing quantitative measurements which are independent of personal bias, from which change at a site can be more readily determined.

Table 5: Comparison of quantitative habitat evaluation methods

PADER's Quantitative Parameters	EPA Region 10's "Level II"	USGS NAWQA
flow	flow	velocity & flow
width, depth & pool/riffle ratio	maximum depth & wetted width	depth, width, & thalweg profile
	residual pool depth (RPD)	
	stream gradient (clinometer or surveying equipment)	stream gradient (surveyed or from USGS quadrangle maps)
embeddedness	embeddedness	embeddedness
instream cover	large woody debris (LWD)	habitat (fish)(type and amount)
	fish cover (5 categories of % cover)	
canopy cover	solar energy inputs & canopy closure	canopy angle (clinometer) & aspect (compass)
stream vegetation & channel vegetation	riparian vegetation structure (three canopy layers)	aquatic & riparian vegetation (identify most common species)
		bank vegetation (point quarter or permanent plots)
bank characteristics, channel stability	bank characteristics	bank width, angle, height, vegetative stability, erosion, shape, substrate
predominant surrounding land use	riparian & channel disturbances (list and evaluate proximity of anthropogenic impacts)	water management features & comments
substrate (organic and inorganic as percentages; odors, oils, deposits)		substrate
		diagram or map to scale of reach
		floodplain width
		photodocumentation

ISSUES

During the discussions, several issues were raised and discussed. These are summarized as follows:

- The roles of volunteer citizen monitoring programs and state and EPA volunteer coordinators were discussed. The citizen programs stressed the need for governmental agencies operating in their area to: 1) assist them in training, 2) guide them as to what to sample for, 3) provide standardized methods, and 4) assist them in data management.

- Collecting permits for collecting macroinvertebrate samples are required by at least two of the states, DWGNRA, and UDSRR. The requirement for permits is based on governmental agencies' needs for data feedback and to assure scientific validity in collection. However, the various conditions may sometimes present difficulties for citizen monitoring programs.

- Questions of seasonal and natural variability in macroinvertebrate populations and the lack of knowledge concerning optimal sampling times were considered.

- The concern was expressed that degradation of biological populations could occur due to excessive sampling or unnecessary stream bottom disturbance while sampling.

- The discussions of varying macroinvertebrate sampling and analysis protocols raised the issue of data comparability among the monitoring agencies in the region and between historical versus more recent data. At least one of the agencies, NJDEP, has studied the differences between historical and new methods, and found that data could be compared. However, a change in DRBC protocols in the early 1980's resulted in data that are not directly comparable to data collected in the 1970's.

FUTURE EFFORTS

- It was generally agreed that a periodic conference/workshop had value. There were no suggestions concerning the frequency of such conferences.

- As an extension of the workshop, representatives of the state agencies (PADER, NJDEP, and NYDEC) expressed interest in having a field session where each agency would demonstrate their biological and habitat assessment methods. Most attendees expressed interest in attending such a demonstration and a fall 1994 meeting was tentatively established. The field meeting would be a step towards further interagency standardization of macroinvertebrate and habitat sampling methods.

- Another technique for water quality monitoring, Low Altitude Remote Sensing, was briefly discussed by Dick Albert of DRBC. DRBC has requested funding to pursue this method. Kyle Myers of Cornell Cooperative Extension mentioned that Cornell University is also doing projects using this technique, and may have some New York data.

- Dick Albert of DRBC suggested the possibility for the collective group to pursue a joint effort to repeat the 1974 Delaware River water quality/biological survey conducted cooperatively by PADER and NJDEP and published by PADER (Brezina et al., 1974). This study sampled numerous locations on the Delaware River between Hancock, NY and Trenton, NJ plus many tributaries. A similar study would collect water quality and biological data directly comparable to data collected over 20 years ago so that trends could be determined.

- The DRBC and DWGNRA will cooperate in a special study of macroinvertebrates in the

Delaware River and tributaries from 1994-1996. Results will be used to define seasonal and natural variation, to determine appropriate analysis and interpretation techniques, and to define existing water quality in tributaries using macroinvertebrates. When enough data is available, biological criteria for tributaries may then be incorporated into DRBC's Special Protection Waters regulations.

- The DRBC/NPS water quality monitoring program is currently being redesigned, and the information gained from this workshop concerning sites, frequencies, parameters, and methods used by the various agencies and groups in the region will be used to develop and implement an effective, yet affordable program.

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REFERENCES

Albert, Richard C. February 1984. 1983 water quality studies and recommended monitoring program, Delaware Water Gap National Recreation Area. Delaware River Basin Commission: West Trenton, New Jersey. Upper Delaware Summer Limnological Program. Report No. 6. 40 pages.

Barbour, Michael T. and James B. Stribling. 1991. Use of habitat assessment in evaluating the biological integrity of stream communities. In: Biological Criteria: Research and regulation: Proceedings of a Symposium. December 12-13, 1990, Arlington, VA. Washington, DC: US EPA. EPA-440/5-91-005. pp. 25-38.

Baren, Carl F. March 1971. A preliminary limnological survey of the Tocks Island Area of the Delaware River. Delaware River Basin Commission: West Trenton, New Jersey. 104 pages.

Bauersfeld, W.R., E.W. Moshinsky and C.E. Gurney. 1993. Water Resources Data New Jersey Water Year 1992, Volume 1, Surface Water Data. USDI, Geological Survey: West Trenton, NJ. US Geological Survey Water-Data Report NJ-92-1. 507 pages.

Bode, Robert W. March 1994. Personal Communication. New York Department of Environmental Conservation.

_____, Margaret A. Novak and Lawrence E. Abele. 1993. 20 Year Trends in Water Quality of Rivers and Streams in New York State Based on Macroinvertebrate Data, 1972-1992. NY State Department of Environmental Conservation: Albany, NY. 196 pages.

_____. March 1991. Methods for rapid biological assessment of streams. NY State Department of Environmental Conservation: Albany, NY. 57 pages.

_____. February 1991. Quality assurance work plan for biological stream monitoring in New York State. NY State Department of Environmental Conservation: Albany, NY. 79 pages.

Brezina, Edward R., Karl K. Sheaffer, James T. Ulanoski, Frank J. Takacs, Robert J. Ketch and Robert L. Gordon. September 1976. Delaware River Basin water quality; 1974. PA Department of Environmental Resources, NJ Department of Environmental Protection, and US EPA: Harrisburg, PA. BWMQ Publication No. 44. 100 pages.

Brodhead Watershed Association. Spring 1994. Citizen Streamwatch Program Procedure Manual. Brodhead Watershed Association: 23 pages.

Delaware River Basin Commission. Unpublished (1983). Comparison of 1968 and 1979 aquatic vascular plant surveys - non-tidal Delaware River. Delaware River Basin Commission: West Trenton, NJ.

_____. 1992. Resolution 92-21, Adoption of Special Protection Water Policies and Regulations. Delaware River Basin Commission: West Trenton, NJ.

_____. 1993. Quality Assurance Plan for Scenic River Monitoring Program. Delaware River Basin Commission: West Trenton, NJ.

Firda, Gary D., Richard Lumia and Patricia M. Murray. 1993. Water Resources Data New York Water Year 1992, Volume 1, Eastern New York excluding Long Island. USDI, Geological Survey: Albany, NY. US Geological Survey Water-Data Report NY-92-1. 362 pages.

Frost, S. A., A. Hunt and W. E. Kershaw. 1971. Evaluation of a kicking technique for sampling stream bottom fauna. Can. J. Zoology 49:167-173.

Hayslip, Gretchen A. 1993. EPA Region 10 in-stream biological monitoring handbook (for wadable streams in the Pacific Northwest). US EPA: Seattle, WA. EPA-910/9-92-013. 75 pages.

Intergovernmental Task Force on Monitoring Water Quality. March 18, 1994. ITFM Issue Paper: Determining the Comparability of Bioassessments. Washington, D.C.: Environmental Indicators Task Group. 23 pages.

Kratzer, Todd W. April 1990. Findings of the 1989 Scenic Rivers water quality monitoring program. Delaware River Basin Commission in cooperation with the National Park Service: West Trenton, New Jersey. DRBC/NPS Cooperative Monitoring Program. Report No. 12. 45 pages.

Kelly, Kevin R. 1993. Zebra Mussels. Harrisburg, PA: PA Department of Environmental Resources, Bureau of Water Quality Management. 30 pages.

Limbeck, Robert and Warren R. Huff. 1990. Recommended biological criteria for the Middle Delaware Scenic and Recreational River. Delaware River Basin Commission: West Trenton, NJ. 58 pages.

Meador, Michael R., Cliff R. Hupp, Thomas F. Cuffney and Martin E. Gurtz. 1993. Methods for characterizing stream habitat as part of the National Water-Quality Assessment Program. USDI, Geological Survey: Raleigh, NC. Open-File Report 93-408. 48 pages.

Monroe County Planning Commission. 1994. Water Quality Study 1993. Monroe County Planning Commission: Stroudsburg, PA. 84 pages.

Pennsylvania Department of Environmental Resources, Bureau of Water Quality Management. 1988. Standardized biological field collection methods. PA Department of Environmental Resources: Harrisburg, PA. 35 pages.

_____. 1991. Standardized biological field collection methods. PA Department of Environmental Resources: Harrisburg, PA. Publication No. 33, DER#636-9/91.

Pike County Conservation District. 1993. 1992 Annual Report: Surface Water Quality Monitoring Program. Pike County Conservation District: Milford, PA. 110 pages.

Plafkin, James L., Michael T. Barbour, Kimberly D. Porter, Sharon K. Gross and Robert M. Hughes. 1989. Rapid bioassessment protocols for use in streams and rivers: Benthic macroinvertebrates and fish. US EPA: Washington, D.C. EPA/444/4-89-001. 122 pages + appendices.

Rockel, Edward G. and David Rose. December 1982. Analysis of phytoplankton data in the non-tidal Delaware River 1969-1979. Delaware River Basin Commission and the National Park Service: West Trenton, New Jersey. Upper Delaware River Summer Limnological Program. Report No. 4. 81 pages.

Schanzenbacher, Hannelore. March 1994. Personal Communication. Pike County Conservation District.

Snyder, Hank and Cynthia Poten. 1991. The Delaware Riverkeeper Network Volunteer Manual: A handbook of information and procedures for volunteer citizen monitors working in the Delaware Estuary. The Delaware Riverkeeper Network: Lambertville, NJ. 47 pages.

White, K.E., T.E. White, R.L. Druther and P. Moleski. 1993. Water Resources Data Pennsylvania Water Year 1992, Volume 1, Delaware River Basin. USDI, Geological Survey: Lemoyne, PA. US Geological Survey Water-Data Report PA-92-1. 340 pages.

Appendix A

Summaries of Water Quality Programs in the Scenic Rivers Region of the Delaware River

Alliance for Acid Rain Monitoring

Volunteers	Data Management	Reporting	Year Founded

Name of Program	Sampling Season	# Delaware River Sites	# Tributary Sites
Volunteer Network	year round	0	0

Parameter	Frequency	Method	Method Range or Detection Limit
alkalinity	weekly		
pH	weekly		

Notes
Alliance for Acid Rain Monitoring (ALARM)

Brodhead Watershed Association

Volunteers	Data Management	Reporting	Year Founded	Educational Function
80	database on PC		1991	citizens

Name of Program	Sampling Season	# Delaware River Sites	# Tributary Sites
Volunteer Network	year round	0	126

Parameter	Frequency	Method	Method Range or Detection Limit
dissolved oxygen	monthly	kit (LaMotte 5854; start '94)	0 - 20 mg/l
fecal coliform	1 per year	private laboratory	
flow	monthly	estimated visually	
macroinvertebrates	monthly	RBP I (starting '94)	
nitrate-Nitrogen	monthly	kit (LaMotte 3119; start '94)	0.2 - 1.0 mg/l
ortho-phosphate	monthly	kit (LaMotte 3119; start '94)	0.2 - 1.0 mg/l
pH	monthly	kit (LaMotte 5858)	3.0 - 10.5
physical habitat	monthly	RBP (starting '94)	
stream watch	monthly	visually	
temperature	monthly	thermometer (LaMotte 1066)	-5 - 45 C
turbidity	monthly	kit (LaMotte 5859)	

Notes

The goals of this program are to educate and involve residents in local water quality issues and to monitor the Brodhead Creek and its tributaries (including Paradise, Pocono, Marshalls, and McMichael Creeks and their tributaries). The Brodhead watershed is one of the largest watersheds draining to the scenic rivers portion of the Delaware River.

Cornell Cooperative Extension

Volunteers	Data Management	Reporting	Year Founded	Educational Function
				all ages

Name of Program	Sampling Season	# Delaware River Sites	# Tributary Sites
Volunteer Network		0	0

Notes

This is a volunteer network, like the Riverkeeper program, in Sullivan and Delaware Counties, NY. They coordinate with the NY Audubon volunteer program. Monitoring programs are being established at schools.

Delaware River Basin Commission/National Park Service

Volunteers	Data Management	Reporting	Year Founded	Educational Function
4	STORET	annual report published	1983	through NPS visitor services

Name of Program	Sampling Season	# Delaware River Sites	# Tributary Sites
Routine '83-'93	May-September	39	43
Routine '94+	March to December	17	34

Routine '83-'93

Parameter	Frequency	Method	Method Range or Detection Limit
air temperature	biweekly	thermometer	-10 - 110 C
conductivity	biweekly	electrode conductivity cell	0 - 19,990 umhos/cm
dissolved oxygen	biweekly	Winkler & membrane electrode	0 - 20 mg/l
fecal coliform	biweekly	membrane filtration	1/100 ml - 200/plate
flow	biweekly	pygmy meter &/or gage height	
macroinvertebrates	1 per year	modified RBP III	
pH	biweekly	kit with color wheel	4 - 10 units
water temperature	biweekly	thermistor probe	-2 - 50 C

Routine '94 +

Parameter	Frequency	Method	Method Range or Detection Limit
above parameters	monthly	see above	see above
habitat	1 per year	RBP or similar	
nirite+nitrate as Nitrogen	monthly	cadmium reduction/colorimeter	0.02 - 3.00 mg/l
ortho-phosphate	monthly	ascorbic acid red./colorimeter	0.01 - 3.00 mg/l
turbidity	monthly	absorbimetric/colorimeter	5 - 400 FTU

Notes

This cooperative program between DRBC and two units of the National Park Service (Delaware Water Gap National Recreation Area and Upper Delaware Scenic and Recreational Area) was initiated in 1983. Each year, approximately 39 river sites and 43 tributary sites have been sampled, although a total of 172 sites have been sampled at least once. The DRBC/NPS program is currently undergoing extensive evaluation and revision. A totally new program will be implemented sometime in 1994. Various special studies have been performed, including sediment toxics at selected river sites in 1987-1988 and in one tributary in 1992; ammonia, nitrite+nitrate, total Kjeldahl nitrogen, total phosphorus, ortho-phosphate, and BOD at 32 river and 36 tributary sites from 1990-1993; TDS & TSS in 1992-1993; and E. coli at 20 river sites in 1992. Other special studies included productivity, diel variations in water quality, travel time and dispersion of a conservative dye tracer and an evaluation of automated continuous water monitoring equipment. A special study to be conducted from 1994-1996 will collect additional macroinvertebrate samples to examine seasonality, natural variablity, and collection and data analysis methods. Each year, several Student Conservation Association volunteers and/or college student interns assist with the program.

Delaware Riverkeeper Network

Volunteers	Data Management	Reporting	Year Founded	Educational Function
	database on PC		1993	citizens

Name of Program	Sampling Season	# Delaware River Sites	# Tributary Sites
Volunteer Network	year round	2	40

Parameter	Frequency	Method	Method Range or Detection Limit
dissolved oxygen	biweekly		
macroinvertebrates	biweekly	Isaac Walton League (start'94)	
nitrate-Nitrogen	biweekly	kit (LaMotte)	
ortho-phosphate	biweekly	kit (LaMotte)	
pH	biweekly		
secchi depth	biweekly		
temperature	biweekly		
wildlife sightings	biweekly		

Notes

The Delaware Riverkeeper Network is a volunteer citizen monitoring program that was initially focused on the Delaware Estuary, and expanded to the Upper and Middle Delaware in 1993.

Monroe County Planning Commission

Volunteers	Data Management	Reporting	Year Founded
0	database on PC; linked to GIS	annual report published	1985

Name of Program	Sampling Season	# Delaware River Sites	# Tributary Sites
Water Quality Study	August	0	120

Parameter	Frequency	Method	Method Range or Detection Limit
acidity	1 per year	EPA 305.1	0.50 mg/l
alkalinity	1 per year	EPA 310.1	0.50 mg/l
ammonia-Nitrogen	1 per year	EPA 350.3	0.050 mg/l
BOD	1 per year	SM 5210-D	0.50 mg/l and up
chloride	1 per year	EPA 325.3	1.0 mg/l
conductivity	1 per year	electrode conductivity cell	0 - 19,990 umhos/cm
dissolved oxygen	1 per year	membrane electrode	0 - 20 mg/l
fecal coliform	1 per year	SM 9222-D	20/100 ml
flow	1 per year	pygmy meter	
macroinvertebrates	1 per year	modified RBP II	
nitrate-Nitrogen	1 per year	EPA 353.1	0.002 mg/l
nitrite-Nitrogen	1 per year	EPA 354.1	0.002 mg/l
pH	1 per year	meter	0.01 units
TDS	1 per year	conductivity meter	
temperature	1 per year	thermistor probe	-2 - 50 C
total hardness	1 per year	SM 2340-C	0.60 mg/l
total phosphorus	1 per year	EPA 356.2	0.030 mg/l
TSS	1 per year	SM 2540-D	1.00 mg/l

Notes

A total of 120 sites in Monroe County, Pennsylvania have been sampled, with 35 sites sampled per year in the last two weeks of August. Four of these are permanant Boundary Control Points for the DRBC Special Protection Waters Regulations. The water quality database is linked to the county's GIS system.

New Jersey Department of Environmental Protection

Volunteers	Data Management	Reporting	Year Founded
0	WATSTORE/STORET/ database on PC	results published annually	1976

Name of Program	Sampling Season	# Delaware River Sites	# Tributary Sites
Ambient	year round	1	1
AMNET	early spring-late fall	0	11
BASS	summer and fall		

Ambient Parameter	Frequency	Method	Method Range or Detection Limit
12 metals	5 per year		
8 minerals-dissolved	5 per year		
ammonia-Nitrogen (tot.&dis.)	5 per year		
BOD	5 per year		
COD	5 per year		
conductivity	5 per year	laboratory	
Enterococcus	5 per year	MF	
fecal coliform	5 per year	MPN	
hardness	5 per year	laboratory	
Kjeldahl Nitrogen (tot.&dis.)	5 per year		
nitrate-Nitrogen (tot.&dis.)	5 per year		
nitrite-Nitrogen (tot.&dis.)	5 per year		
org. carbon, total & dissolved	5 per year		
pH	5 per year	laboratory	
sediment-35 parameters	1 per 2-3 yrs		
total alkalinity	5 per year	laboratory	
total phosphorus (tot.&dis.)	5 per year		
TSS	5 per year		

AMNET Parameter	Frequency	Method	Method Range or Detection Limit
macroinvertebrates	1 per 5 yrs.	modified RBP II	

BASS Parameter	Frequency	Method	Method Range or Detection Limit
various	1 per 5 yrs.		

Notes

NJDEP cooperates with NJ district of USGS in the collection of chemical and physical data, which is then stored in STORET through WATSTORE. Sites are in GIS. One ambient water quality fixed station on the Delaware River at Montague is sampled annually and one on Flatbrook is sampled every other year. Routine parameters are collected in Jan, Mar, May, Jul, and Oct. AMNET stations are sampled on the basis of watershed rotation every 5-6 yrs. BASS sites are sampled intensively 3 times in 3 days during summer and fall at those sites indicated as severely impaired by the RBP II analysis (as such, sites vary each year). Various chemical and physical parameters are measured at BASS sites to identify point and non-point pollution sources, including toxicity tests (acute and chronic using daphnia, mycids and/or fathead minnows). Biological data is stored in a PC database, but is in the process of being transferred to BIOS in STORET. An electronic Bulletin Board System is in place for exchanging information concerning the zebra mussel, an invasive exotic mussel, which has not yet been found in NJ.

New York Audubon/Eldred Nature Center

Volunteers	Data Management	Reporting	Year Founded
			1993

Name of Program	Sampling Season	# Delaware River Sites	# Tributary Sites
Volunteer Network	year round	1	20

Parameter	Frequency	Method	Method Range or Detection Limit
coliform	4 per year		
dissolved oxygen	4 per year	kit (LaMotte)	
macroinvertebrates	4 per year	Isaac Walton League	
pH	4 per year	kit (LaMotte)	
temperature	4 per year		
visual	4 per year	handbook	

Notes

This is a volunteer network where the primary emphasis is on educating citizens about local water quality issues and identifying potential water quality problems through visual observations. The parameters measured at each site vary depending on an individual's interests, and may include some or all of the parameters listed. Funding is provided by the Upper Delaware Council.

New York Department of Environmental Conservation

Volunteers	Data Management	Reporting	Year Founded
0	STORET/database on PC (dBase III)	report every 2 years	1972

Name of Program	Sampling Season	# Delaware River Sites	# Tributary Sites
Fisheries Program	summer and fall	4	0
RIBS		2	15

Fisheries Program

Parameter	Frequency	Method	Method Range or Detection Limit
bass & walleye adults	1 per year	boat electroshocking	
bass young-of-year	1 per year	backpack electroshocking	
fish tissue-12 toxics	1 per 3-6 yrs		

RIBS-intensive

Parameter	Frequency	Method	Method Range or Detection Limit
conductivity	8 per year		
dissolved oxygen	8 per year		
fish community	1 per 10 yrs.		
fish tissue	1 per 10 yrs.		
macroinvertebrate tissue	1 per year		
macroinvertebrates	1 per year	modified RBP III	
metals	8 per year		
minerals, hardness	8 per year		
nutrients	8 per year		
pH	8 per year		
sediment-pesticides	8 per year		
sediments-metals	8 per year		
solids	8 per year		
temperature	8 per year		
toxicity (bioassays)	4 per year		
volatile organics	8 per year		

RIBS-screening sites

Parameter	Frequency	Method	Method Range or Detection Limit
macroinvertebrates	1 per year	modified RBP I	

Notes

Chemical/physical data is in STORET, while biological data is in a database (dBase III) on a PC. The Rotating Intensive Basin Study (RIBS) includes intensive, screening, and routine sites. One basin is sampled intensively for 2 consecutive years, on a 6 year cycle (e.g. 4 years not sampled). The Delaware Basin was the subject of RIBS in 1987-1988 and again in 1993-1994. In addition to many water column parameters, sediment and macrointertebrate tissue are tested for heavy metals, PCB's, organochlorine pesticides, nitrogen, phosphorus, and polynucleated aromatic hydrocarbons. Screening sites are expected to have good water quality, therefore only modified RBP I is done to confirm that no impacts are evident. One routine site at the Delaware River at Port Jervis is sampled 4 times each year. In addition to RIBS, special surveys are performed to document specific impacts using a method closest to RBP III.

New York City Department of Environmental Protection

Volunteers	Data Management	Reporting	Year Founded
0			

Name of Program	Sampling Season	# Delaware River Sites	# Tributary Sites
Water Quality	year round	0	38

Parameter	Frequency	Method	Method Range or Detection Limit
alkalinity	biweekly		
ammonia-Nitrogen	biweekly		
chloride	biweekly		
color	biweekly		
conductance	biweekly	meter	
dissolved oxygen	biweekly	meter	
fecal coliform	biweekly		
macroinvertebrates		modified RBP III	
major cations	monthly		
nitrate-Nitrogen	biweekly		
pH	biweekly	meter	
temperature	biweekly	meter	
TOC (Total Organic Carbon)	biweekly		
total coliform	biweekly		
total phosphorus	biweekly		
trace metals	quarterly		
turbidity	biweekly		

Notes

This monitoring program addresses point source concerns and agricultural land use above New York City reservoirs. There are 22 sites above Cannonsville, 14 above Pepacton, and 4 above Neversink reservoirs.

Pennsylvania Department of Environmental Resources

Volunteers	Data Management	Reporting	Year Founded
0	STORET		1962

Name of Program	Sampling Season	# Delaware River Sites	# Tributary Sites
Fish Tissue	August to October	2	0
Fixed Stations	year round	3	5
Zebra Mussel	May to October	3	0

Fish Tissue

Parameter	Frequency	Method	Method Range or Detection Limit
fish tissue	1 per 5-6 yrs	electrofishing for collection	

Fixed Stations - low alkalinity

Parameter	Frequency	Method	Method Range or Detection Limit
Acid - total acidity	monthly		
BOD - 5 day inhibited	monthly		
Ca - total recov. & dissolved	monthly		
Mg - total recov. & dissolved	monthly		

Fixed Stations - low alkalinity + reference

Parameter	Frequency	Method	Method Range or Detection Limit
7 additional metals	monthly		
Bo, total recoverable	monthly		
Cyanide, total & free	monthly		

Fixed Stations - routine

Parameter	Frequency	Method	Method Range or Detection Limit
7 metals (total recoverable)	monthly		
alkalinity	monthly		
ammonia-Nitrogen	monthly		
conductivity	monthly		
flow	monthly	gage height or current meter	
habitat	monthly	RBP	
hardness	monthly		
macroinvertebrates	1 per year	modified RBP III	
nitrate-Nitrogen	monthly		
nitrite-Nitrogen	monthly		
pH	monthly		
sulfates	monthly		
TDS & TSS	monthly		
total organic carbon	monthly		
total phosphorus	monthly		

Zebra Mussel Network

Parameter	Frequency	Method	Method Range or Detection Limit
zebra mussels	biweekly	artificial substrate	

Notes

Fixed station data is in STORET. Stations in the Upper Delaware region are sampled for routine, low alkalinity or low alkalinity + reference parameters. All stations are tested for the "routine" parameters (metals include Al, Cu, Fe, Mn, Ni, Pb, and Zn). Stations sampled for "low alkalinity" parameters are tested for the 4 additional parameters listed, while those sampled for "low alkalinity + reference" parameters are also analyzed for Boron, Cyanide, and 7 metals (including Ag, As, Ba, Be, Cd, Co, and Cr). The zebra mussel monitoring network was designed to detect and monitor the spread of this invasive exotic species (it has yet not been found outside of Lake Erie in PA). Fish tissue has been sampled in the Delaware River at Callicoon and the West Branch in 1989 and 1993 and will eventually be sampled at all sites.

Pennsylvania Fish and Boat Commission

Volunteers	Data Management	Reporting	Year Founded
0	database on PC (dBase)		

Name of Program	Sampling Season	# Delaware River Sites	# Tributary Sites
Fisheries Program	summer and fall	0	0
Spring Runoff Study	January to April	0	0

Fisheries Program

Parameter	Frequency	Method	Method Range or Detection Limit
bass & walleye adults	1 per year	backpack electroshocking	
bass young-of-year	1 per year	backpack electroshocking	
trout populations	1 per year	backpack electroshocking	

Spring Runoff Study

Parameter	Frequency	Method	Method Range or Detection Limit
alkalinity			
hardness			
pH			
temperature			

Notes

The purpose of this program is to study the effects of management actions on trout in Toms, Dingmans, Raymondskill, and Shohola Creeks (summer) and to study summer young-of-year and fall adult populations of smallmouth bass and walleye in the Delaware River from Damascus to Sandts Eddy.

Pennsylvania Lake Management Society

Volunteers	Data Management	Reporting	Year Founded	Educational Function

Name of Program	Sampling Season	# Delaware River Sites	# Tributary Sites
Volunteer Network		0	0

Notes

This is a volunteer network for monitoring water quality in lakes.

Pike County Conservation District

Volunteers	Data Management	Reporting	Year Founded	Educational Function
0	database on PC (Alpha IV)	annual report published	1987	elementary to high school

Name of Program	Sampling Season	# Delaware River Sites	# Tributary Sites
Water Quality	June to October	0	38

Parameter	Frequency	Method	Method Range or Detection Limit
alkalinity	biweekly	SM 403	1 mg/l
ammonia-Nitrogen	biweekly	SM 417E	0.01 mg/l
BOD	biweekly	EPA 5210 B	0.01 mg/l
chlorine (total & free)	biweekly	kit (Hach CN-70)	0 - 3.5 mg/l
conductivity	biweekly	electrode conductivity cell	0 - 50,000 umhos/cm
dissolved oxygen	biweekly	membrane electrode	0 - 20 mg/l
fecal coliform	biweekly	SM 909 C	1/100 ml
macroinvertebrates	1 per year	modified RBP III	
nitrate-Nitrogen	biweekly	SM 418B	0.01 mg/l
nitrite-Nitrogen	biweekly	EPA 354.1	0.01 mg/l
ortho-phosphate	biweekly	SM 424F	0.01 mg/l
pH	biweekly	kit with color wheel	4 - 10 units
TDS & TSS	biweekly	EPA 160.1/EPA 160.2	1 mg/l
temperature	biweekly		
TKN (Total Kjeldahl Nitrogen)	biweekly	Hach digestahl	0.01 mg/l
total phosphate	biweekly	SM 424B	0.01 mg/l

Notes

From 1987 to 1990, sites were chosen randomly, with a total of about 120 sites sampled. Starting in 1991, 18 sites were established at the mouth of each watershed, plus 20 sites above and below STP's. From 1991 to 1993 two macroinvertebrate samples were collected per year at each site, in spring and fall. Starting in 1994, due to funding constraints, only one macroinvertebrate sample per year will be collected, probably in July.

Pike/Wayne Trout Unlimited

Volunteers	Data Management	Reporting	Year Founded

Name of Program	Sampling Season	# Delaware River Sites	# Tributary Sites
	year round	0	1

Parameter	Frequency	Method	Method Range or Detection Limit
air temperature	daily		
flow	daily	gage height	
water temperature	continuous		

Notes

Water temperature is monitored continuously (half hour intervals) at one site on the Lackawaxen River to evaluate the temperature effects of reservoir releases from Lake Wallenpaupack.

Pocono Environmental Education Center

Volunteers	Data Management	Reporting	Year Founded	Educational Function
0				all ages of students; teachers

Name of Program	Sampling Season	# Delaware River Sites	# Tributary Sites
		0	0

Parameter	Frequency	Method	Method Range or Detection Limit
biological			
chemical			
physical			

Notes

The Pocono Environmental Education Center conducts a 3-day program on water quality, during which they collect chemical, physical, and macroinvertebrate data on a number of tributaries within DWGNRA. They also look for zebra mussels, which have not yet been found in the area.

US Environmental Protection Agency, Regions II & III

Volunteers	Data Management	Reporting	Year Founded
0	STORET/Oracle database; linked to GIS		1993

Name of Program	Sampling Season	# Delaware River Sites	# Tributary Sites
MAHA (Region III)	mid-April to June	0	5

MAHA (Region III)

Parameter	Frequency	Method	Method Range or Detection Limit
chemical	1 per year		
fish community	1 per year		
fish tissue	1 per year		
macroinvertebrates	1 per year		
periphyton	1 per year		
physical habitat	1 per year		
sediment	1 per year		

Notes

Region III began the Mid-Atlantic Highlands Assessment (MAHA) in 1993 and will also sample in 1994. This program was developed within an ecoregion framework for identify reference conditions, in cooperation with the states, to assess and monitor regional water quality. An EMAP (Ecological Monitoring and Assessment Program) component was added to MAHA, to add a research component. The MAHA/EMAP data will be stored in ORACLE, a GIS-based database, which is not compatible with STORET. Region II has monitored the fish community at sites on Van Campens and Big Flatbrook using the IBI, and is working on a report that investigates seasonality and how it influences the index. Region II also provides support to state programs.

US Geological Survey, NJ District

Volunteers	Data Management	Reporting	Year Founded
0	WATSTORE/STORET/ ASCII files		

Name of Program	Sampling Season	# Delaware River Sites	# Tributary Sites
Continuous Flow	year round	3	2
NJ District		3	2

Parameter	Frequency	Method	Method Range or Detection Limit
11 major ions	5 per year		
13 metals	1 per year		
14 nutrients	5 per year		
2 microbiological	5 per year		
4 field parameters	5 per year		
COD	1 per year		
flow	5 per year	continuous or instantaneous	
sediment-34 parameters	1 per 3 yrs.		

Notes

NJ district of USGS cooperates with NJDEP in this monitoring program. Two of the active continuous gage sites listed are maintained by NY district (Neversink River and Delaware River at Port Jervis). Continuous gage data are stored in ASCII format on PC's. The National Water Quality Assessment Program (NAWQA) has not yet done a regional assessment of the Delaware River Basin, but plans to in the future.

Appendix B

Water Quality Stations in the Scenic Rivers Region of the Delaware River

KEY TO SITE TYPES:

WQMON:	Water quality monitoring site in STORET
GAGE:	Gage and/or flow monitoring site in STORET
NON-STORET:	Water quality, gage, and/or biological monitoring site, not in STORET

PLEASE NOTE:

Sites are sorted by AGENCY, SUB-WATERSHED, then SITE NUMBER.
PA Fish and Boat Commission and NY Audubon sites are not georeferenced, therefore are not shown on the accompanying map.

The following list of sites was developed from a STORET search and information provided by workshop participants. Sites in lakes, drinking water sources, effluents, and immediately downstream of effluents are not included in this list. Date last sampled should be viewed as a guideline, since some data, even for STORET sites, may not be entered into STORET. When one agency had multiple sites at the same location listed in STORET, only one site is provided below. Therefore, if complete data is needed, it is recommeded that a search be made of all STORET sites within a certain area, and that appropriate agencies and/or groups be contacted for data not entered into STORET.

AGENCY	SUB-WATERSHED	STATION DESCRIPTION	SITE NUMBER	TYPE	LATITUDE	LONGITUDE	LAST SAMPLED
Brodhead Watershed Association							
	BRODHEAD CREEK BASIN						
		LEAVITT BRANCH US OF RT 447 BR AND DUTCH HILL RD	101	NON-STORET	41 11 60	75 15 20	1994
		RED RUN AT WEISS PROPERTY LINE	101A	NON-STORET	41 12 30	75 20 20	1994
		CLEAR RUN AT WEISS PROPERTY LINE	101B	NON-STORET	41 12 4	75 20 7	1994
		GILPIN RUN ON WEISS PROPERTY	101C	NON-STORET	41 12 3	75 20 20	1994
		BUCK HILL CR 150' BELOW BUCK HILL STP	102	NON-STORET	41 11 50	75 15 40	1994
		BEAVER BROOK 500 YDS US OF PLAYHOUSE RD	103	NON-STORET	41 10 40	75 16 30	1994
		BEAVER BROOK 300 YDS US OF SITE 103	103A	NON-STORET	41 11 50	75 16 20	1994
		BEAVER BROOK JUST ABOVE CONF W/ RATTLESNAKE	103B	NON-STORET	41 10 20	75 16 30	1994
		MIDDLE BRANCH BELOW LONG ACRES DAM	104	NON-STORET	41 13 22	75 16 6	1994
		SPRUCE MT RUN BELOW LONG ACRES DAM	104A	NON-STORET	41 13 22	75 16 6	1994
		MIDDLE BRANCH HEADWATERS AT RT 447, 0.5 MI US 104	104B	NON-STORET	41 13 50	75 16 0.2	1994
		DITCH INTO MIDDLE BRANCH BELOW 104B	104C	NON-STORET	41 13 50	75 16 0.2	1994
		BRODHEAD CR AT RT 447 200 YDS DS SPRUCE CABIN RUN	105	NON-STORET	41 10 40	75 14 40	1994
		MILL CR OFF WEIBOLT RD ABOVE YELLOW ROOM SWIM AREA	105A	NON-STORET	41 10 4	75 16 20	1994
		MILL CR BELOW YELLOW ROOM SWIMMING AREA	105B	NON-STORET	41 10 0.4	75 16 20	1994
		MILL CREEK AT PREACHER HILL ROAD	105C	NON-STORET	41 9 50	75 16 1	1994
		UNNAMED TRIB TO BRODHEAD BELOW GOOSE POND RUN	106	NON-STORET	41 11 10	75 15 10	1994
		INLET TO HENRY'S POND ON UNNAMED TRIB (106)	106A	NON-STORET	41 11 10	75 15 30	1994
		SCHAFER'S SWAMP RUN BELOW LEWIS' MARKET	107	NON-STORET	41 10 10	75 16 3	1994
		MOUTH OF MILL CREEK AT JUNCTION WITH BRODHEAD	108	NON-STORET	41 9 50	75 14 29	1994
		BRODHEAD CR BELOW JUNCTION W/ MILL CR	108A	NON-STORET	41 9 50	75 14 29	1994
		GOOSE POND RUN DS RT 447 BR	109	NON-STORET	41 11 18	75 15 5	1994
		RATTLESNAKE CR DS OF BEAVER BROOK	110	NON-STORET	41 10 20	75 16 30	1994
		LEAVITT BRANCH DS OF OUTFALL OF DRY DAM	110A	NON-STORET	41 12 30	75 14 50	1994
		RATTLESNAKE CK HEADWATERS, END PLEASANT RIDGE RD	110B	NON-STORET	41 10 50	75 17 20	1994
		GOOSE POND RUN ABOVE DRY DAM	111	NON-STORET	41 12 30	75 14 7	1994
		SPRUCE CABIN RUN AT PRICE BROS POND	112	NON-STORET	41 9 50	75 14 29	1994
		BUCK HILL CR ABOVE BR AT GOLF CLUB	112A	NON-STORET	41 11 40	75 16 44	1994
		GOOSE POND RUN DS DRY DAM @ CANADENSIS VET CLINIC	113	NON-STORET	41 12 4	75 14 40	1994
		UNNAMED TRIB TO BRODHEAD NEAR CLARK RD & RT 447	114	NON-STORET	41 8 40	75 14 8	1994
		MILL CRK HEADWATERS/MONOMONOCK RD UPPER BRIDGE	116	NON-STORET	41 10 10	75 17 9	1994
		HARDYTOWN RUN UPSTREAM OF BRIDGE ON HARDYTOWN RD	117	NON-STORET	41 9 20	75 17 30	1994
		HARDYTOWN RUN HEADWATERS, END OF HARDYTOWN RD	117A	NON-STORET	41 9 3	75 17 50	1994
		BRODHEAD CR ABOVE STONY RUN CONF	121	NON-STORET	41 7 30	75 14 8	1994
		STONY RUN AT MOUTH	122	NON-STORET	41 7 30	75 14 8	1994
		BRODHEAD CR BELOW STONY RUN CONF	123	NON-STORET	41 7 30	75 14 8	1994
		INDIAN RUN ABOVE SWIFTWATER CONF	225	NON-STORET	41 5 60	75 20 50	1994
		SWIFTWATER CR ABOVE INDIAN RUN CONF	226	NON-STORET	41 5 60	75 20 50	1994
		SWIFTWATER CR AT SWIFTWATER INN PRIVATE BR	227	NON-STORET	41 5 40	75 19 40	1994
		SWIFTWATER CR AT POWER LINE-BROSIUS PROPERTY	228	NON-STORET	41 5 40	75 18 40	1994
		SWIFTWATER CR AT RT 314 BR	229	NON-STORET	41 5 30	75 17 20	1994
		SWIFTWATER BELOW SPILLWAY OF SWIFTWATER LAKE	230	NON-STORET	41 5 60	75 16 30	1994
		FOREST HILLS RUN ABOVE SWIFTWATER CR CONF	231	NON-STORET	41 6 6	75 16 20	1994

AGENCY	SUB-WATERSHED	STATION DESCRIPTION	SITE NUMBER	TYPE	LATITUDE	LONGITUDE	LAST SAMPLE
		PARADISE CR AT SWIFTWATER CONF	232	NON-STORET	41 6 50	75 16 10	1994
		PARADISE CR ABOVE RT 191 TUNNEL	233	NON-STORET	41 4 20	75 13 40	1994
		BRODHEAD CR ABOVE PARADISE CONF	234	NON-STORET	41 4 2	75 13 10	1994
		CRANBERRY CR IN CRANBERRY ESTATES	235	NON-STORET	41 8 30	75 17 10	1994
		CRANBERRY CR AT CRANBERRY CR RD	236	NON-STORET	41 7 40	75 15 60	1994
		CRANBERRY CR ABOVE PARADISE CONF	237	NON-STORET	41 5 40	75 14 60	1994
		BUTZ RUN AT PARADISE CONF	238	NON-STORET	41 4 40	75 13 50	1994
		PARADISE CR BELOW PFLA LAKE SPILLWAY	239	NON-STORET	41 6 40	75 15 60	1994
		PARADISE CR ABOVE PFLA LAKE	240	NON-STORET	41 6 47	75 16 10	1994
		PARADISE TRIB ABOVE PFLA LAKE	240A	NON-STORET			1994
		PARADISE TRIB ABOVE PFLA LAKE	240B	NON-STORET			1994
		PARADISE CR AT TOWNSHIP PARK	241	NON-STORET	41 7 20	75 17 20	1994
		PARADISE CR AT BRIDGE ON KEOKEE CHAPEL ROAD	242	NON-STORET	41 7 30	75 18 20	1994
		DEVILS HOLE CR AT KOERNER ROAD	243	NON-STORET	41 7 60	75 18 60	1994
		TANK CR AT DEVILS HOLE ROAD (SO.)	244	NON-STORET	41 7 40	75 18 50	1994
		YANKEE CR AT DEVILS HOLE ROAD (NO.)	245	NON-STORET	41 7 40	75 20 40	1994
		FOREST HILLS RUN AT BR ON RED ROCK RD	246	NON-STORET	41 6 40	75 17 60	1994
		FOREST HILLS RUN AT BR ON CARLTON RD	247	NON-STORET	41 6 40	75 17 60	1994
		FOREST HILLS RUN AT BR ON GRANGE RD	248	NON-STORET	41 6 60	75 20 50	1994
		MCMICHAEL CR AT CONF W/BRODHEAD ACCESS AT STORM ST	313	NON-STORET	40 59 10	75 11 10	1994
		BRODHEAD CR AT GLEN PARK ABOVE E. STROUDSBURG STP	314	NON-STORET	40 59 2	75 10 50	1994
		BRODHEAD CR AT GLEN PARK BELOW E. STROUDSBURG STP	314A	NON-STORET	40 59 50	75 9 2	1994
		BRODHEAD CR BELOW ROCK TENN PLANT AT GAGE STATION	315	NON-STORET	41 0 1	75 8 4	1994
		BRODHEAD CR ABOVE ROCK TENN PLANT	315A	NON-STORET	40 59 50	75 9 2	1994
		MOUTH OF MARSHALLS CR AT BR ON GAP VIEW DRIVE	316	NON-STORET	41 0 1	75 8 4	1994
		BRODHEAD CR BELOW MOUTH OF MARSHALLS @ RIVER RD	317	NON-STORET	40 59 30	75 8 20	1994
		MARSHALLS CR ABOVE CONF W/ POND RUN	318	NON-STORET	41 2 40	75 7 30	1994
		POND RUN ABOVE CONF W/ MARSHALLS CR	319	NON-STORET	41 2 40	75 7 30	1994
		BRODHEAD CR ABOVE STROUDSBURG WATER PLANT	320	NON-STORET	41 0 59	75 12 9	1994
		BRODHEAD CR BELOW WATER PLANT AT MOOSE LODGE	320A	NON-STORET	41 0 42	75 11 40	1994
		BRODHEAD CR AT ANALOMINK BEHIND ANALOMINK HOTEL	321	NON-STORET	41 3 2	75 13 20	1994
		BRODHEAD CR BELOW ANALOMINK, 100 YDS DS RT 191 BR	322	NON-STORET	41 0 60	75 12 10	1994
		CRANBERRY RUN AT CONF W/BRODHEAD	322A	NON-STORET	41 3 60	75 12 10	1994
		POCONO CR BEHIND STROUD FORD, OFF RT 611	326	NON-STORET	40 59 11	75 12 10	1994
		POCONO CR AT KNIGHTS OF COLUMBUS PARK	327	NON-STORET	40 59 7	75 13 30	1994
		LITTLE POCONO CR BEHIND STROUDSBURG BUS GARAGE	328	NON-STORET			1994
		POCONO CR UNDER RT 80 AT BRIDGE STREET	329	NON-STORET	40 59 7	75 13 30	1994
		UNNAMED TRIB (LS) TO SAMBO CREEK AT FAWN RD BRIDGE	330	NON-STORET	40 0.5 40	75 10 52	1994
		UNNAMED TRIB (LS) TO SAMBO CK DS L VALHALLA US STP	331	NON-STORET	41 2 10	75 10 20	1994
		SAMBO CREEK AT CONFLUENCE WITH BRODHEAD	332	NON-STORET	41 0 60	75 12 10	1994
		SAMBO CK DS PLANNED STP OFF FAWN RD AT PRIVATE BR	334	NON-STORET	41 2 0.7	75 11 7	1994
		SAMBO CK DS E. STRODS. WATER PLANT US PLANNED STP	335	NON-STORET	41 2 50	75 10 50	1994
		SAMBO CREEK HEADWATERS	336	NON-STORET	41 4 30	75 10 5	1994
		DRY SAWMILL RUN OFF SULLIVAN TRAIL	401	NON-STORET	40 3 40	75 22 20	1994

AGENCY	SUB-WATERSHED	STATION DESCRIPTION	SITE NUMBER	TYPE	LATITUDE	LONGITUDE	LAST SAMPLED
		POCONO CR BELOW DRY SAWMILL RUN OFF WILKEE RD	402	NON-STORET	41 3 40	75 22 3	1994
		POCONO CR BEHIND VILLAGE STORE OFF SULLIVAN TRAIL	403	NON-STORET	41 3 6	75 19 30	1994
		SCOT RUN OFF OLD RT 611 BY SCOTRUN POST OFFICE	410	NON-STORET	41 3 48	75 19 3	1994
		POCONO CR OFF RT 611 BEHIND STAINED GLASS STORE	411	NON-STORET	41 2 40	75 18 40	1994
		MILL RUN ON MILL ROAD	412	NON-STORET	41 2 20	75 18 40	1994
		POCONO CR ON MILL ROAD	413	NON-STORET	41 2 20	75 18 40	1994
		POCONO CR ON WARNER ROAD	420	NON-STORET	41 1 50	75 18 10	1994
		BULGER RUN ON CHERRY LANE ROAD	422	NON-STORET	41 1 50	75 17 50	1994
		CRANBERRY CREEK NEAR RT 611	423	NON-STORET	41 1 20	75 17 50	1994
		POCONO CR ON RT 611 DS CONF OF CRANBERRY CR	424	NON-STORET	41 0 40	75 17 30	1994
		INTERMITTENT TRIB ABOVE LAUREL LAKE ROAD	440	NON-STORET	41 1 10	75 16 60	1994
		LAUREL LAKE RUN DS LAUREL LAKE ON LAUREL LAKE RD	441	NON-STORET	41 1 12	75 16 60	1994
		LAUREL LAKE RUN DS MONROE CO VO-TECH STP	442	NON-STORET	41 0 48	75 17 30	1994
		LAUREL LAKE RUN AT CONFLUENCE WITH POCONO	443	NON-STORET	41 0 60	75 17 8	1994
		POCONO CR AT RIMROCK DRIVE	450	NON-STORET	41 0 10	75 16 50	1994
		HYPSY CR OFF HYPSY RD	501	NON-STORET	40 59 50	75 23 60	1994
		BOWERS CR AT BRIDGE ON HYPSY RD	502	NON-STORET	40 59 50	75 23 60	1994
		FALL CR OFF HYPSY ROAD	503	NON-STORET	41 0 5	75 24 5	1994
		MCMICHAEL CR AT BR ON RT 715 AT MCMICHAELS	504	NON-STORET	40 59 50	75 23 60	1994
		MCMICHAEL "SPLIT" BELOW WHITE CHURCH ROAD	505	NON-STORET	40 58 50	75 23 50	1994
		MCMICHAEL "SPLIT" ABOVE BR ON RT 715	506	NON-STORET	40 58 30	75 23 50	1994
		PFA HATCHERY INLET	507	NON-STORET	40 58 30	75 23 50	1994
		PFA HATCHERY OUTLET	508	NON-STORET	40 58 30	75 23 50	1994
		MCMICHAEL BELOW AKIBA RD AT PRIVATE BR OFF RT 715	509	NON-STORET	40 57 60	75 23 30	1994
		MCMICHAEL AT OLD CAMP ALICE ROAD	510	NON-STORET	40 57 20	75 23 52	1994
		MCMICHAEL AT EFFORT-NEOLA ROAD BR	511	NON-STORET	40 56 40	75 23 50	1994
		MCMICHAEL AT CAMP ALICE	512	NON-STORET	40 56 10	75 23 27	1994
		MCMICHAEL AT LEHIGH VALLEY SAND & GRAVEL	513	NON-STORET	40 55 50	75 22 40	1994
		MCMICHAEL AT MCILHANEY RD BR	514	NON-STORET	40 55 50	75 21 50	1994
		MCMICHAEL AT GREENVIEW RD BR	515	NON-STORET	40 56 10	75 20 60	1994
		TRIB NEAR CAMP AKIBA RD ON RT 715	516	NON-STORET	40 56 10	75 23 27	1994
		TRIB AT COTTONTAIL AND SILVER VALLEY ROAD	517	NON-STORET	40 56 10	75 22 60	1994
		TRIB AT SILVER VALLEY ROAD AND KENNEL ROAD	518	NON-STORET	40 56 20	75 22 46	1994
		TRIB AT BRIDGE ON GREENVIEW ROAD	519	NON-STORET	40 55 50	75 21 40	1994
		KETTLE CR AT RT 209 BR AND RIMROCK ROAD	530	NON-STORET	40 57 30	75 17 30	1994
		APPENZELL CR AT EASTON-BELMONT PIKE BR AT BRAINERD	531	NON-STORET	40 57 30	75 17 40	1994
		MCMICHAEL CK AT MANOR DRIVE BRIDGE DS PVM STP	532	NON-STORET	40 57 3	75 17 10	1994
		MCMICHAEL CR US TURKEY HILL RD BR US DISCHARGE	552	NON-STORET	40 57 50	75 15 9	1994
		MCMICHAEL CR DS TURKEY HILL RD DS STORM DISCHARGE	553	NON-STORET	40 57 44	75 15 3	1994
Delaware River Basin Commision/National Park Service							
	ABE LORD CREEK BASIN						
		ABE LORD CREEK AT RR NEAR CONF W/ DEL R	DRBC/NPS83	WQMON	41 52 15	75 12 12	1993
	ADAMS CREEK BASIN						
		ADAMS CR AT RT 209 BRIDGE	DRBC/NPS43	WQMON	41 14 21	74 51 28	1994

AGENCY	SUB-WATERSHED	STATION DESCRIPTION	SITE NUMBER	TYPE	LATITUDE	LONGITUDE	LAST SAMPLE
		ADAMS CR AT DEWA BOUNDARY	DRBC/NPS431	WQMON	41 15 9	74 52 57	1994
	ALICIAS CREEK BASIN						
		ALICIAS CR AT RT 209 BRIDGE	DRBC/NPS39	WQMON	41 9 42	74 54 30	1993
	ATCO CREEK BASIN						
		ATCO CREEK AT ROUTE 652 BRIDGE (PA)	DRBC/NPS1161	WQMON	41 36 47	75 4 25	1993
	BASKET CREEK BASIN						
		BASKET CR AT RT 97 BRIDGE	DRBC/NPS80	WQMON	41 50 40	75 6 5	1993
	BEAVER BROOK BASIN						
		BEAVER BROOK AT RT 97 BRIDGE	DRBC/NPS58	WQMON	41 28 56	74 57 2	1994
	BEAVERDAM CREEK BASIN						
		BEAVERDAM CR AT RT 371 BRIDGE IN DAMASCUS, PA	DRBC/NPS71	WQMON	41 42 13	75 4 5	1993
	BRODHEAD CREEK BASIN						
		BRODHEAD CR AT BRIDGE RT 402	DRBC/NPS27	WQMON	40 59 52	75 8 35	1994
		BRODHEAD CR AT RR BRIDGE JUST DS OF RT 80	DRBC/NPS2701	WQMON	40 59 51	75 8 59	1992
		MARSHALLS CR IN MINISINK HILLS AT BRIDGE	DRBC/NPS28	WQMON	40 59 55	75 8 18	1993
	BRODHEAD-HELLERS CR BASIN						
		BRODHEAD-HELLERS CR AT RT 209 BRIDGE	DRBC/NPS38	WQMON	41 9 12	74 55 0	1993
	BUSHKILL CREEK BASIN						
		LITTLE BUSHKILL CR AT DEWA BOUNDARY		NON-STORET			1994
		BUSHKILL CR MOUTH: CONFLUENCE TO DEL RIV (PA)	DRBC/NPS310	WQMON	41 5 34	74 59 33	
		BUSHKILL CR AT RT 209 BRIDGE	DRBC/NPS33	WQMON	41 5 30	75 0 12	1994
		LITTLE BUSHKILL CR NEAR CONF W/BUSHKILL CR	DRBC/NPS34	WQMON	41 5 30	75 0 15	1994
		BUSHKILL CR AT DEWA BOUNDARY (PA)	DRBC/NPS341	WQMON	41 5 19	75 2 18	1994
		SAW CREEK NEAR BUSHKILL CREEK CONFLUENCE (PA)	DRBC/NPS342	WQMON	41 5 24	75 2 18	1993
	CALKINS CREEK BASIN						
		CALKINS CR NEAR CONF W/ DEL R	DRBC/NPS69	WQMON	41 40 25	75 3 55	1994
	CALLICOON CREEK BASIN						
		CALLICOON CR - EAST BRANCH AT CONF W/ NORTH BRA	DRBC/NPS73	WQMON	41 45 30	75 1 45	1987
		CALLICOON CR - NORTH BRANCH AT CONF W/ EAST BRA	DRBC/NPS74	WQMON	41 45 36	75 1 58	1987
		CALLICOON CR AT RT 97 BRIDGE	DRBC/NPS75	WQMON	41 45 52	75 3 15	1994
	CHERRY CREEK BASIN						
		CHERRY CR NEAR RT 80 BRIDGE	DRBC/NPS26	WQMON	40 59 10	75 8 15	1994
		CHERRY CR IN DELAWARE WATER GAP BOROUGH	DRBC/NPS261	WQMON	40 59 4	75 8 45	1994
	CONASHAUGH CREEK BASIN						
		CONASHAUGH CR AT RT 209 BRIDGE	DRBC/NPS44	WQMON	41 14 8	74 50 40	1993
	COOLEY CREEK BASIN						
		COOLEY CR AT BRIDGE NEAR CONF W/ DEL R	DRBC/NPS78	WQMON	41 48 49	75 6 3	1993
	CUMMINS CREEK BASIN						
		CUMMINS CREEK AT DEWA BOUNDARY	DRBC/NPS108	WQMON	41 20 38	74 45 39	1993
	DECKERS CREEK BASIN						
		DECKERS CR AT RT 209 BRIDGE	DRBC/NPS40	WQMON	41 10 15	74 54 9	1993
	DELAWARE RIVER						
		DEL RIV AT TENMILE ACCESS AREA		NON-STORET			1994
		DEL RIV AT COCHECTON BRIDGE		NON-STORET			1994
		DEL RIV AT CALLICOON BRIDGE		NON-STORET			1994
		DEL RIV AT POINT OF GAP, PA	DRBC/NPS01	WQMON	40 58 3	75 7 15	

AGENCY	SUB-WATERSHED	STATION DESCRIPTION	SITE NUMBER	TYPE	LATITUDE	LONGITUDE	LAST SAMPLED
		DEL RIV JUST US OF ARROW ISLAND	DRBC/NPS01	WQMON	40 58 3	75 7 15	1993
		DEL RIV AT KITTATINNY ACCESS AREA	DRBC/NPS1	WQMON	40 58 12	75 7 40	1994
		DEL RIV AT DELAWARE WATER GAP RAILROAD STATION	DRBC/NPS100	WQMON	40 58 58	75 8 9	1987
		DEL RIV AT WALPACK BEND	DRBC/NPS102	WQMON	41 5 41	74 58 26	1991
		DEL RIV AT DINGMANS FERRY CAMPGROUND, PA	DRBC/NPS104	WQMON	41 12 55	74 51 43	1987
		DEL RIV SOUTH OF VANDERMARK CR	DRBC/NPS106	WQMON	41 19 8	74 47 47	1987
		DEL RIV NORTH OF VANDERMARK CR	DRBC/NPS107	WQMON	41 19 21	74 47 36	1993
		DEL RIV AT NORTHERN DEWA BOUNDARY	DRBC/NPS1081	WQMON	41 20 37	74 45 28	1994
		DEL RIV US NEV RIV AT RT 84 BRIDGE	DRBC/NPS109	WQMON	41 21 32	74 41 39	1993
		DEL RIV ABOVE M OF NEVERSINK R	DRBC/NPS11	WQMON	41 22 27	74 42 0	1989
		DEL RIV AT PORT JERVIS BEACH	DRBC/NPS110	WQMON	41 22 36	74 42 21	1993
		DEL RIV AT NORTH PORT JERVIS	DRBC/NPS111	WQMON	41 23 5	74 42 43	1989
		DEL RIV AT PORT JERVIS/MATAMORAS BR (NY)	DRBC/NPS1111	WQMON	41 22 20	74 41 49	1994
		DEL RIV AT MILLRIFT RR BRIDGE	DRBC/NPS112	WQMON	41 24 23	74 44 21	1993
		DEL RIV AT POND EDDY, NY	DRBC/NPS114	WQMON	41 26 22	74 49 12	1993
		DEL RIV AT POND EDDY, PA	DRBC/NPS115	WQMON	41 26 22	74 49 12	1994
		DEL RIV BELOW CORTESE LANDFILL	DRBC/NPS116	WQMON	41 36 30	75 4 28	1987
		DEL RIV AT SKINNERS FALLS, NY	DRBC/NPS117	WQMON	41 40 8	75 3 28	1987
		DEL RIV AT MILANVILLE, PA	DRBC/NPS118	WQMON	41 40 22	75 3 37	1990
		DEL RIV AT MATAMORAS ACC AREA	DRBC/NPS12	WQMON	41 23 10	74 42 44	1993
		DEL RIV AT BARRYVILLE AT BRIDGE	DRBC/NPS13	WQMON	41 28 37	74 54 50	1994
		DEL RIV AT SHOHOLA AT BRIDGE	DRBC/NPS14	WQMON	41 28 32	74 54 50	1993
		DEL RIV AT LACKAWAXEN ACC AREA	DRBC/NPS15	WQMON	41 29 10	74 59 10	1993
		DEL RIV JUST US OF LACKAWAXEN ACCESS AREA	DRBC/NPS151	WQMON	41 29 20	74 59 8	1993
		DEL RIV AT NARROWSBURG ACC AREA (NY)	DRBC/NPS16	WQMON	41 36 35	75 3 40	1993
		DEL RIV AT NARROWSBURG ACC AREA (PA)	DRBC/NPS17	WQMON	41 36 37	75 3 45	1993
		DEL RIV AT SKINNERS FALLS ACCESS AREA	DRBC/NPS18	WQMON	41 40 15	75 0 33	1992
		DEL RIV AT COCHECTON ACC AREA (NY)	DRBC/NPS19	WQMON	41 42 35	75 4 5	1985
		DEL RIV AT WORTHINGTON ACC AREA	DRBC/NPS2	WQMON	41 0 13	75 6 20	1993
		DEL RIV AT DAMASCUS ACC AREA	DRBC/NPS20	WQMON	41 42 20	75 4 5	1993
		DEL RIV AT CALLICOON ACC AREA (NY)	DRBC/NPS21	WQMON	41 46 10	75 5 28	1994
		DEL RIV BETWEEN SHAWNEE AND SCHELLENBERGER ISLAND	DRBC/NPS213	WQMON	40 59 30	75 7 50	1993
		DEL RIV AT SHAWNEE ACCESS AREA	DRBC/NPS215	WQMON	41 0 10	75 5 20	1993
		DEL RIV AT CALLICOON ACC AREA (PA)	DRBC/NPS22	WQMON	41 45 40	75 3 35	1992
		DEL RIV APPROX 1000' DS OF FLATBROOK CR	DRBC/NPS225	WQMON	41 5 40	74 58 0.6	1993
		DEL RIV AT EQUINUNK AT BR TO LORDVILLE	DRBC/NPS23	WQMON	41 52 5	75 12 55	1994
		DEL RIV AT BUCKINGHAM ACC AREA	DRBC/NPS24	WQMON	41 52 8	75 15 52	1993
		DEL RIV BETWEEN MINISINK AND NAMANOCK ISLANDS	DRBC/NPS243	WQMON	41 16 30	74 50 20	1993
		DEL RIV AT DELAWARE VALLEY HIGH SCHOOL	DRBC/NPS251	WQMON	41 20 40	74 44 20	1992
		DEL RIV JUST US OF MILFORD LANDING	DRBC/NPS252	WQMON	41 20 56	74 42 50	1993
		DEL RIV AT SMITHFIELD ACC ARA	DRBC/NPS3	WQMON	41 1 28	75 3 35	1994
		DEL RIV AT POXONO ACC AREA	DRBC/NPS4	WQMON	41 2 18	75 2 0	1993
		DEL RIV AT MILFORD BEACH	DRBC/NPS461	WQMON	41 18 33	74 47 44	1994
		DEL RIV AT DEPEW ACC AREA	DRBC/NPS5	WQMON	41 3 30	75 0 57	1993

AGENCY	SUB-WATERSHED	STATION DESCRIPTION	SITE NUMBER	TYPE	LATITUDE	LONGITUDE	LAST SAMPLED
		DEL RIV BELOW M OF FLATBROOK CREEK	DRBC/NPS6	WQMON	41 5 30	74 58 0	1990
		DEL RIV AT BUSHKILL ACC AREA	DRBC/NPS7	WQMON	41 6 30	74 58 55	1994
		DEL RIV AT KELLAMS BRIDGE	DRBC/NPS781	WQMON	41 49 24	75 6 51	1993
		DEL RIV AT ESHBACK ACC AREA	DRBC/NPS8	WQMON	41 8 8	74 55 45	1993
		DEL RIV JUST BELOW EAST/WEST BR CONFLUENCE (PA)	DRBC/NPS881	WQMON	41 56 11	75 16 47	1988
		DEL RIV AT DINGMANS ACC AREA	DRBC/NPS9	WQMON	41 13 10	74 51 8	1994
	DENMARK CREEK BASIN						
		DENMARK CR AT RT 209 BRIDGE	DRBC/NPS35	WQMON	41 6 18	74 59 14	1993
	DINGMANS CREEK BASIN						
		DINGMANS CR AT RT 209 BRIDGE	DRBC/NPS42	WQMON	41 13 15	74 52 17	1993
		DINGMANS CR AT DEWA BOUNDARY (PA)	DRBC/NPS421	WQMON	41 14 17	74 55 12	1993
	DUNNFIELD CREEK BASIN						
		DUNNFIELD CR AT FOOT BRIDGE	DRBC/NPS25	WQMON	40 58 14	75 7 37	1993
	EAST BRANCH BASIN						
		EAST BRANCH AT RT 97 BRIDGE IN HANCOCK, NY	DRBC/NPS89	WQMON	41 57 10	75 16 40	1994
		BEAVER KILL NR CONFLUENCE W/EAST BR DEL RIV (NY)	DRBC/NPS891	WQMON	41 59 14	75 7 30	1993
		EAST BRANCH AT HARVARD (NY)	DRBC/NPS892	WQMON	42 1 15	75 7 1	
		EAST BRANCH AT SHINHOPPLE (NY)	DRBC/NPS893	WQMON	42 2 21	75 4 1	
		EAST BRANCH AT DOWNSVILLE (NY)	DRBC/NPS894	WQMON	42 4 33	74 59 28	
	EQUINUNK CREEK BASIN						
		EQUINUNK CR AT RT 191 BRIDGE IN EQUINUNK PA	DRBC/NPS85	WQMON	41 51 12	75 13 31	1994
	FACTORY CREEK BASIN						
		FACTORY CR AT RT 191 BRIDGE IN EQUINUNK PA	DRBC/NPS86	WQMON	41 51 19	75 13 42	1993
	FEAGLES LAKE BASIN						
		OUTLET FROM FEAGLES LAKE RR BRIDGE IN NARROWSBURG	DRBC/NPS66	WQMON	41 36 24	75 3 45	1985
	FISH CABIN CREEK BASIN						
		FISH CABIN CR	DRBC/NPS113	WQMON	41 26 27	74 48 14	1993
	FLATBROOK BASIN						
		LITTLE FLATBROOK AT PETERS VALLEY	DRBC/NPS2251	WQMON	41 11 25	74 50 49	1994
		BIG FLATBROOK AT PETERS VALLEY	DRBC/NPS2252	WQMON	41 11 24	74 50 45	1994
		FLATBROOK CR AT OLD MINE RD BRIDGE	DRBC/NPS32	WQMON	41 6 8	74 57 45	1993
		FLATBROOK CR AT WALPACK CENTER BRIDGE (NJ)	DRBC/NPS321	WQMON	41 9 25	74 52 39	1993
	GRASSY SWAMP BROOK BASIN						
		GRASSY SWAMP BROOK NEAR CONF W/ DEL R	DRBC/NPS62	WQMON	41 31 40	75 0 22	1993
	HALFWAY BROOK BASIN						
		HALFWAY BROOK AT RT 97 BRIDGE	DRBC/NPS57	WQMON	41 28 37	74 54 38	1994
	HANKINS CREEK BASIN						
		HANKINS CR RT97 BRIDGE	DRBC/NPS77	WQMON	41 48 51	75 5 25	1993
	HELLERS CREEK BASIN						
		HELLERS CR AT RT 209 BRIDGE	DRBC/NPS37	WQMON	41 9 0	74 55 8	1993
	HOLLIHAN BROOK BASIN						
		HOLLIHAN BROOK AT RT 97 BRIDGE	DRBC/NPS81	WQMON	41 51 4	75 8 5	1993
	HOLLISTER CREEK BASIN						
		HOLLISTER CREEK NEAR ABRAMSVILLE, PA	DRBC/NPS76	WQMON	41 46 2	75 5 5	1993
	HORNBECKS CREEK BASIN						
		HORNBECKS CR AT RT 209 BRIDGE	DRBC/NPS41	WQMON	41 11 22	74 53 4	1993

AGENCY	SUB-WATERSHED	STATION DESCRIPTION	SITE NUMBER	TYPE	LATITUDE	LONGITUDE	LAST SAMPLED
		HORNBECKS CR AT DEWA BOUNDARY (PA)	DRBC/NPS411	WQMON	41 11 44	74 54 35	1993
	HUMPHRIES BROOK BASIN						
		HUMPHRIES BROOK IN LORDVILLE NEAR CONF W/ DEL R	DRBC/NPS84	WQMON	41 52 7	75 12 25	1993
	LACKAWAXEN RIVER BASIN						
		LACKAWAXEN R AT RT 590 BRIDGE	DRBC/NPS59	WQMON	41 29 11	74 59 32	1994
	LITTLE EQUINUNK CR BASIN						
		LITTLE EQUINUNK CR AT BRIDGE NEAR CONF W/ DEL R	DRBC/NPS79	WQMON	41 49 33	75 7 15	1994
	MASTHOPE CREEK BASIN						
		MASTHOPE CR AT RR BRIDGE NEAR CONF W/ DEL R	DRBC/NPS63	WQMON	41 32 17	75 1 40	1994
	MILL BROOK BASIN						
		MILL BROOK AT RT 97 BRIDGE	DRBC/NPS52	WQMON	41 26 20	74 49 18	1993
	MONGAUP RIVER BASIN						
		MONGAUP RIVER AT RT 97 BRIDGE	DRBC/NPS51	WQMON	41 25 37	74 45 22	1994
	NARROW FALLS BROOK BASIN						
		NARROW FALLS BROOK AT RT 97 BRIDGE	DRBC/NPS60	WQMON	41 30 24	74 58 55	1993
	NEVERSINK RIVER BASIN						
		NEVERSINK RIVER AT RT 6 BRIDGE	DRBC/NPS50	WQMON	41 21 40	74 41 8	1994
	PAHAQUARRY CREEK BASIN						
		PAHAQUARRY CR AT OLD MINE RD BRIDGE	DRBC/NPS30	WQMON	41 2 17	75 1 37	1993
	PEA BROOK BASIN						
		PEA BROOK AT RR BRIDGE NEAR CONF W/ DEL R	DRBC/NPS82	WQMON	41 51 8	75 8 17	1993
	POND EDDY CREEK BASIN						
		POND EDDY CR NEAR CONF W/DEL R	DRBC/NPS53	WQMON	41 25 48	74 49 34	1993
	RAYMONDSKILL CREEK BASIN						
		RAYMONDSKILL CR AT RT 209 BRIDGE	DRBC/NPS45	WQMON	41 17 10	74 50 6	1993
		RAYMONDSKILL CR AT DEWA BOUNDARY (PA)	DRBC/NPS451	WQMON	41 18 20	74 51 6	1994
	SAWKILL CREEK BASIN						
		SAWKILL CR AT RT 209 BRIDGE	DRBC/NPS48	WQMON	41 19 2	74 48 0	1994
	SCHOOLHOUSE CREEK BASIN						
		SCHOOLHOUSE CR AT RT 371 BRIDGE NEAR CONF W/ DEL	DRBC/NPS72	WQMON	41 42 55	75 3 17	1993
	SHAWNEE CREEK BASIN						
		SHAWNEE CR AT RESORT PARKING LOT (PA)	DRBC/NPS271	WQMON	41 0 29	75 6 43	1993
		SHAWNEE CR AT GOLF CLUB BRIDGE	DRBC/NPS272	WQMON	41 0 24	75 6 51	1994
	SHIMERS BROOK BASIN						
		SHIMERS BROOK AT RT 521 BRIDGE	DRBC/NPS47	WQMON	41 18 47	74 46 52	1994
	SHINGLE HOLLOW CR BASIN						
		SHINGLE HOLLOW CR AT RT 191 BRIDGE	DRBC/NPS88	WQMON	41 54 19	75 16 19	1993
	SHINGLEKILL BASIN						
		SHINGLEKILL AT RT 97	DRBC/NPS501	WQMON	41 24 27	74 44 6	1994
	SHOHOLA CREEK BASIN						
		SHOHOLA CR AT RAILROAD BRIDGE NEAR CONF W/ DEL	DRBC/NPS56	WQMON	41 28 20	74 54 47	1994
	SLATEFORD CREEK BASIN						
		SLATEFORD CR UNDER NAT'L PARK DRIVE	DRBC/NPS001	WQMON	40 56 48	75 6 57	1993
		SLATEFORD CR AT DEWA BOUNDARY	DRBC/NPS002	WQMON	40 56 43	75 7 43	1993
	STOCKPORT CREEK BASIN						
		STOCKPORT CR AT RT 191 BRIDGE	DRBC/NPS87	WQMON	41 53 43	75 16 39	1993
	TENMILE RIVER BASIN						

AGENCY	SUB-WATERSHED	STATION DESCRIPTION	SITE NUMBER	TYPE	LATITUDE	LONGITUDE	LAST SAMPLE
		TENMILE RIVER EAST BRANCH NEAR CONF W/ TMR	DRBC/NPS64	WQMON	41 34 15	75 0 30	1991
		TENMILE RIVER AT RT 97 BRIDGE	DRBC/NPS65	WQMON	41 34 15	75 0 40	1994
	TOMS CREEK BASIN						
		TOMS CR AT RT 209 BRIDGE	DRBC/NPS36	WQMON	41 7 29	74 57 14	1993
		TOMS CR AT DEWA BOUNDARY (PA)	DRBC/NPS361	WQMON	41 9 7	74 57 19	1993
	TWIN LAKES CREEK BASIN						
		WALKER LAKE CREEK AT CONF OF TWIN LAKES CR	DRBC/NPS54	WQMON	41 25 52	74 53 28	1993
		TWIN LAKES CREEK AT RAILROAD BRIDGE NEAR CONF W/D	DRBC/NPS55	WQMON	41 26 13	74 53 10	1993
	VAN CAMPENS BROOK BASIN						
		VAN CAMPENS BROOK AT OLD MINE RD BRIDGE	DRBC/NPS31	WQMON	41 3 28	75 0 5	1994
	VANDERMARK CREEK BASIN						
		VANDERMARK CR AT MOUTH	DRBC/NPS49	WQMON	41 19 20	74 47 45	1994
	WEST BRANCH BASIN						
		WEST BRANCH AT RT 191 BRIDGE IN HANCOCK, NY	DRBC/NPS90	WQMON	41 57 8	75 17 30	1994
		WEST BRANCH DEL R AT TWIN FALLS CAMPGROUND (NY)	DRBC/NPS91	WQMON	41 57 7	75 18 56	
		WEST BRANCH DEL RIVER AT HALE EDDY BRIDGE (NY)	DRBC/NPS92	WQMON	42 0 11	75 23 2	
		WEST BRANCH DEL RIVER AT STILESVILLE (NY)	DRBC/NPS93	WQMON	42 4 48	75 24 9	
	WESTCOLANG CREEK BASIN						
		WESTCOLANG CR AT BR NEAR CONF W/ DEL R	DRBC/NPS61	WQMON	41 30 40	75 0 24	1993
	WHITE BROOK BASIN						
		WHITE BROOK AT RT 521 BRIDGE	DRBC/NPS46	WQMON	41 18 3	74 47 15	1993
	YORK LAKE FALLS BASIN						
		YORK LAKE FALLS AT ROUTE 97 BRIDGE (NY)	DRBC/NPS591	WQMON	41 29 44	74 58 57	1993
Delaware Riverkeeper Network							
	BUSHKILL CREEK BASIN						
		LITTLE BUSHKILL CREEK AT BR. .25 MI N OF ROUTE 209	01-LBUSH	NON-STORET	41 5 50	75 0 15	1994
	CALKINS CREEK BASIN						
		CALKINS CREEK IN MILANVILLE, PA	17-CALKINS	NON-STORET	41 40 20	75 4 0	1994
	CALLICOON CREEK BASIN						
		E. BRANCH CALLICOON CR ABOVE N. BR., HORTONVILLE	19-CALL1	NON-STORET	41 45 30	75 1 50	1994
		CALLICOON CR UNDER HIGH BRIDGE, CALLICOON	20-CALL3	NON-STORET	41 45 50	75 3 10	1994
		N. BRANCH CALLICOON CR, STATE FISH ACCESS AREA	22-CALL2	NON-STORET	41 47 0	75 1 0	1994
	COOLEY CREEK BASIN						
		COOLEY CR UNDER RIVER ROAD,1.3 MI S OF KELLAMS BR.	11-COOLEY	NON-STORET	41 30 15	75 6 10	1994
	DELAWARE RIVER						
		DEL RIV AT HUNTS LANDING (US OF CUMMINS CR)	04-DR2	NON-STORET	41 20 37	74 45 30	1994
		DEL RIV AT PORT JERVIS, NY (WEST END BEACH)	06-DR1	NON-STORET	41 22 37	74 42 20	1994
	DINGMANS CREEK BASIN						
		DINGMANS CREEK AT ROUTE 209, DINGMANS FERRY	03-DING	NON-STORET	41 13 15	74 52 20	1994
	EAST BRANCH BASIN						
		EAST BRANCH DEL RIV AT FRONT STREET, HANCOCK, NY	24-EBDR	NON-STORET	41 57 5	75 16 20	1994
	FLATBROOK BASIN						
		FLATBROOK AT USGS GAGE N OF FLATBROOKVILLE	02-FLAT	NON-STORET	41 6 24	74 57 9	1994
	HANKINS CREEK BASIN						
		HANKINS CREEK AT ROUTE 94 (200 M E. OF ROUTE 97)	23-HANKINS	NON-STORET	41 48 50	75 5 30	1994
	HOLLISTER CREEK BASIN						

SUB-AGENCY	WATERSHED	STATION DESCRIPTION	SITE NUMBER	TYPE	LATITUDE	LONGITUDE	LAST SAMPLED
		HOLLISTER CREEK UNDER BR. 1 MI FROM CALLICOON BR.	21-HOLLISTER	NON-STORET	41 46 0	75 5 5	1994
	LACKAWAXEN RIVER BASIN						
		LACKAWAXEN RIVER AT KIMBLES BRIDGE, KIMBLES,PA	10-LACK2	NON-STORET	41 28 0	75 7 27	1994
		LACKAWAXEN RIVER AT ROUTE 590 BRIDGE	18-LACK3	NON-STORET	41 40 45	74 59 30	1994
	MASTHOPE CREEK BASIN						
		MASTHOPE CREEK OFF OLD PLANK ROAD IN PA GAMELANDS	13-MASTHOPE	NON-STORET	41 33 25	75 4 40	1994
	MONGAUP RIVER BASIN						
		MONGAUP RIVER AT NYDEC ACCESS TO LOWER MONGAUP	09-MONG2	NON-STORET	41 25 37	74 45 25	1994
		MONGAUP RIVER AT BRIDGE ON ROUTE 17B	15-MONG1	NON-STORET	41 40 0	74 47 0	1994
	NEVERSINK RIVER BASIN						
		NEVERSINK RIVER AT PORT JERVIS, NY	05-NEV3	NON-STORET	41 21 45	74 41 15	1994
		NEVERSINK RIVER AT NEW HOPE FARM, HUGUENOT, NY	07-NEV2	NON-STORET	41 24 15	74 38 0	1994
		NEVERSINK RIVER IN BRIDGEVILLE, NY	14-NEV1	NON-STORET	41 38 0	74 37 10	1994
	TENMILE RIVER BASIN						
		TENMILE RIVER N OF TMR ACCESS AREA, TUSTEN, NY	12-TENMILE	NON-STORET	41 33 20	75 1 8	1994
	TWIN LAKES CREEK BASIN						
		WALKER LAKE CREEK AT SHOHOLA, PA	08-WALKER	NON-STORET	41 25 37	74 54 40	1994
onroe County Planning Commissioon							
	BRODHEAD CREEK BASIN						
		SAMBO CREEK US OF 2ND BR ON FAWN ROAD FROM RT 191	93-01	NON-STORET	41 2 40	75 10 52	1993
		POPLAR RUN OFF ROUTE 447	93-02	NON-STORET	41 6 60	75 13 30	1993
		SPRUCE CABIN RUN OFF ROUTE 447	93-03	NON-STORET	41 9 50	75 14 29	1993
		BUCK HILL CREEK AT BUCK HILL FALLS PROPERTY	93-04	NON-STORET	41 11 9	75 18 1	1993
		BUCK HILL CREEK OFF ROUTE 191	93-05	NON-STORET	41 12 6	75 18 20	1993
		DEVILS HOLE CREEK US OF CONRAIL ROW AT GAMELANDS	93-06	NON-STORET	41 6 30	75 19 40	1993
		RED RUN DS BR ON INDUSTRIAL PARK ROAD (OFF RT940)	93-08	NON-STORET	41 7 40	75 22 50	1993
		SWIFTWATER CR AT SWIFTWATER INN (ROUTE 611)	93-09	NON-STORET	41 5 40	75 19 40	1993
		SWIFTWATER CR 200 YDS DS OF CONNAUGHT LABORATORIES	93-10	NON-STORET	41 5 49	75 19 1	1993
		POCONO CREEK W OF ROUTE 611	93-11	NON-STORET	40 59 50	75 16 40	1993
		REEDERS RUN BETWEEN GARDEN ROAD AND PINE TERRACE	93-12	NON-STORET	41 0 40	75 19 10	1993
		MARSHALLS CR DS OF CONF W/ BEAR SWAMP RUN	93-13	NON-STORET	41 5 30	75 6 60	1993
		BEAVER CREEK 50 YDS DS OF ROUTE 940 BRIDGE	93-17	NON-STORET	41 6 10	75 28 57	1993
		SCOT RUN 25 YDS US OF BRIDGE ON SCOTRUN AVENUE	93-18	NON-STORET	41 3 41	75 18 60	1993
		POCONO CREEK EAST OF WILKIE ROAD	93-19	NON-STORET	40 59 20	75 11 40	1993
		MCMICHAELS CREEK 20 YDS US OF EFFORT-NEOLA RD BR	93-22	NON-STORET	40 56 50	75 23 40	1993
		APPENZELL CREEK OFF SPRUCE WOODS ROAD, DS OF TRIB	93-23	NON-STORET	40 57 20	75 17 40	1993
		BRODHEAD CREEK AT ROUTE 402	93-26	NON-STORET	40 59 31	75 7 60	1993
	BUSHKILL CREEK BASIN						
		BUSHKILL CREEK US OF BR AT CAMP WILLIAM PENN	93-14	NON-STORET			1993
		BUSHKILL CREEK AT RT 209 (125 YDS DS OF STP)	93-24	NON-STORET	41 4 60	75 1 20	1993
	CHERRY CREEK BASIN						
		CHERRY CREEK AT ROUTE 80 (INSTRUMENT SPECIALTIES)	93-27	NON-STORET	40 59 10	75 8 30	1993
		CHERRY CREEK US OF BR ON CHERRY DRIVE	93-33	NON-STORET	40 54 50	75 16 10	1993
	SHAWNEE CREEK BASIN						
		SHAWNEE CREEK 10 YDS DS OF DRBC/NPS271	93-25	NON-STORET	41 0 20	75 6 50	1993
e / Jersey Department of Environmental Protection							

AGENCY	SUB-WATERSHED STATION DESCRIPTION	SITE NUMBER	TYPE	LATITUDE	LONGITUDE	LAST SAMPLE
	CLOVE BROOK BASIN					
	CLOVE BROOK	AN001	NON-STORET	41 18 50	74 40 7	1994
	CLOVE BROOK	AN002	NON-STORET	41 21 6	74 41 10	1994
	DELAWARE RIVER					
	DELAWARE RIVER AT MONTAGUE	01438500	NON-STORET	41 18 30	74 47 40	1994
	DUNNFIELD CREEK BASIN					
	DUNNFIELD CREEK	AN0012	NON-STORET	40 58 10	75 7 30	1994
	FLATBROOK BASIN					
	FLATBROOK AT FLATBROOKVILLE	01440000	NON-STORET	41 6 20	74 57 8	1994
	LITTLE FLAT BROOK	AN004	NON-STORET	41 17 3	74 45 30	1994
	LITTLE FLAT BROOK	AN005	NON-STORET	41 15 50	74 47 30	1994
	BIG FLAT BROOK	AN006	NON-STORET	41 12 .05	74 48 60	1994
	BIG FLAT BROOK	AN007	NON-STORET	41 9 30	74 52 40	1994
	FLAT BROOK	AN008	NON-STORET	41 6 6	74 57 40	1994
	SHIMERS BROOK BASIN					
	SHIMERS BROOK	AN003	NON-STORET	41 18 50	74 46 40	1994
	VAN CAMPENS BROOK BASIN					
	VAN CAMPENS BROOK	AN0011	NON-STORET	41 3 30	75 0 10	1994
	VAN CAMPENS BROOK OUT OF LONG PINE POND	AN009	NON-STORET	41 5 40	74 55 50	1994
New York Audubon/Eldred Nature Center						
	CALLICOON CREEK BASIN					
	CALLICOON CR NO CALLICOON		NON-STORET			1994
	CALLICOON CR SO HORTONVILLE		NON-STORET			1994
	DELAWARE RIVER					
	DEL RIV AT MINISINK FORD		NON-STORET			1994
	HALFWAY BROOK BASIN					
	HALFWAY BROOK AT DELAWARE		NON-STORET			1994
	HALFWAY BROOK 6m NO. ELDRED		NON-STORET			1994
	HALFWAY BROOK 2m SO. ELDRED		NON-STORET			1994
	HALFWAY BROOK 3m SO. ELDRED		NON-STORET			1994
	HANKINS CREEK BASIN					
	HANKINS CREEK		NON-STORET			1994
	LACKAWAXEN RIVER BASIN					
	LAKE TEEDYUSKUNG		NON-STORET			1994
	MASTHOPE CREEK BASIN					
	MASTHOPE CR		NON-STORET			1994
	MILL BROOK BASIN					
	UPPER MILL BROOK AT GLEN SPEY		NON-STORET			1994
	MILL BROOK BETWEEN MOHICAN LAKE AND SAND POND		NON-STORET			1994
	MONGAUP RIVER BASIN					
	BLACK LAKE		NON-STORET			1994
	TORONTO RESER/BLACK L.		NON-STORET			1994
	MONGAUP RIVER AT RIO DAM		NON-STORET			1994
	MONGAUP RIVER AT DELAWARE		NON-STORET			1994
	PEGGY RUNWAY BASIN					
	PEGGY RUNWAY		NON-STORET			1994

AGENCY	SUB-WATERSHED	STATION DESCRIPTION	SITE NUMBER	TYPE	LATITUDE	LONGITUDE	LAST SAMPLED
	SHANDALEE BASIN						
		SHANDALEE		NON-STORET			1994
	SHOHOLA CREEK BASIN						
		SHOHOLA CR		NON-STORET			1994
	TWIN LAKES CREEK BASIN						
		TWIN LAKES AT SHOHOLA		NON-STORET			1994
	UNKNOWN						
		UNNAMED TRIB @ DVCS		NON-STORET			1994
New York City Department of Environmental Protection							
	EAST BRANCH BASIN						
		EAST BRANCH ABOVE DELAWARE COUNTY DAIRIES WWTP	DCDA	NON-STORET	42 19 54	74 32 59	1994
		EAST BRANCH ABOVE ROXBURY WWTP	EDRA	NON-STORET	42 13 38	74 35 53	1994
		TREMPER KILL	P13	NON-STORET	42 7 10	74 49 12	1994
		PLATTE KILL	P21	NON-STORET	42 7 58	74 41 43	1994
		BATAVIA KILL	P50	NON-STORET	42 10 52	74 35 48	1994
		RED KILL	P52	NON-STORET	42 9 33	74 33 21	1994
		DRY BROOK	P56	NON-STORET	42 8 25	74 36 14	1994
		MILL BROOK	P60	NON-STORET	42 6 24	74 43 53	1994
		TERRY CLOVE	P7	NON-STORET	42 7 49	74 54 0	1994
		FALL CLOVE	P8	NON-STORET	42 6 53	74 53 24	1994
		BUSHKILL	PAKA	NON-STORET	42 9 35	74 33 36	1994
		PEPACTON RELEASE	PDB	NON-STORET	42 4 30	74 58 36	1994
		EAST BRANCH ABOVE MARGARETVILLE WWTP	PMSA	NON-STORET	42 8 28	74 39 26	1994
	NEVERSINK RIVER BASIN						
		NEVERSINK RELEASE	NB	NON-STORET	41 49 12	74 38 8	1994
			NEBR	NON-STORET	41 55 6	74 34 22	1994
		ADEN BROOK	NK4	NON-STORET	41 51 13	74 40 43	1994
		KRAMER BROOK	NK6	NON-STORET	41 49 44	74 40 9	1994
		NEVERSINK RIVER	NK7A	NON-STORET	41 53 34	74 35 15	1994
			NWBR	NON-STORET	41 55 13	74 34 31	1994
	WEST BRANCH BASIN						
		TRIBUTARY, STEELE BROOK	C38	NON-STORET	42 16 21	74 55 29	1994
		TROUT CREEK	C7	NON-STORET	42 10 26	75 16 46	1994
		TRIBUTARY, LITTLE DELAWARE	C79	NON-STORET	42 15 33	74 55 43	1994
		LOOMIS BROOK	C8	NON-STORET	42 9 34	75 16 35	1994
			CNB	NON-STORET	42 4 29	75 23 46	1994
			CTB	NON-STORET	42 10 12	75 8 15	1994
			CWB	NON-STORET	42 20 16	74 48 32	1994
		WEST BRANCH ABOVE DELTOWN WWTP	DLTA	NON-STORET	42 15 23	74 57 1	1994
		WEST BRANCH ABOVE DELHI WWTP	DTPA	NON-STORET	42 15 16	74 56 23	1994
		WEST BRANCH ABOVE PENN QUALITY MEATS WWTP	PQTPA	NON-STORET	42 19 40	74 48 0	1994
		WEST BRANCH ABOVE SOUTH KORTRIGHT WWTP	SKTPA	NON-STORET	42 20 37	74 43 13	1994
		WEST BRANCH AT RT 10, BEERS BROOK ROAD	WDBN	NON-STORET	42 7 42	75 9 39	1994
		WEST BRANCH ABOVE HOBART WWTP	WDHOA	NON-STORET	42 22 23	74 40 0	1994
		WEST BRANCH ABOVE LANDFILL ON RT 206	WDLFA	NON-STORET	42 10 0	75 2 28	1994

AGENCY	SUB-WATERSHED	STATION DESCRIPTION	SITE NUMBER	TYPE	LATITUDE	LONGITUDE	LAST SAMPLE
		WEST BRANCH ABOVE STAMFORD WWTP	WDSTA	NON-STORET	42 25 5	74 37 2	1994
		WEST BRANCH ABOVE WALTON WWTP	WSPA	NON-STORET	42 9 56	75 8 27	1994
New York Department of Environmental Conservation							
	CALLICOON CREEK BASIN						
		CALLICOON CR IN CALLICOON @ FISH ACCESS NEAR RT 97	140113S1	NON-STORET	41 45 52	75 3 15	1993
	DELAWARE RIVER						
		DEL RIV AT NYS MILE PT. - 75.2 (near Buckinham)	14 0004	WQMON	41 55 22	75 16 38	1981
		DEL RIV AT NYS MILE PT. - 58.8 (near Equinunk)	14 0006	WQMON	41 49 24	75 6 47	1981
		DEL RIV IN PORT JERVIS @ RT 6/209 BR	14010001	WQMON	41 22 20	74 41 50	1994
		DEL RIV IN NARROWSBURG @ CORTESE LANDFILL (BANK)	14010035	WQMON	41 35 48	75 3 53	1984
		DEL RIV IN COCHECTON @ RT 371 BR	14010047	NON-STORET	41 42 18	75 4 1	1994
		DEL RIV AT NARROWSBURG	14F01001	WQMON	41 36 31	75 3 47	1988
		DEL RIV AT SPARROW BUSH	14F01004	WQMON	41 24 0	74 43 0	
	EAST BRANCH BASIN						
		EAST BRANCH AT NYS MILE PT. - 6.3	14 1048	WQMON	41 56 31	75 13 47	
		BEAVER KILL AT NYS MILE PT. - 17.5	14 2030	WQMON	41 57 54	74 54 26	
		BEAVER KILL AT NYS MILE PT. - 15.2	14 2035	WQMON	41 56 11	74 55 13	
		BEAVER KILL AT NYS MILE PT. - 9.9	14 2108	WQMON	41 56 50	74 58 45	1993
		WILLOWEMOCK CREEK AT NYS MILE PT. - 6.3	14 3020	WQMON	41 54 40	74 49 49	1993
		WILLOWEMOCK CREEK AT NYS MILE PT. - 6.4	14 3025	WQMON	41 54 35	74 49 51	
		EAST BRANCH IN HANCOCK @ RT 97 BR	14031001	WQMON	41 57 10	75 16 31	1994
		EAST BRANCH IN FISHS EDDY @ CO RD 28 BR	14031011	NON-STORET	41 58 23	75 10 28	1988
		EAST BRANCH IN ARKVILLE @ CO RD 38	14031057	NON-STORET	42 9 40	74 37 15	1994
		BEAVER KILL IN COOKS FALLS @ COOKS BROOK RD BR	14032110	NON-STORET	41 56 47	74 58 47	1993
		BEAVER KILL IN ROSCOE @ OLD RT 17 BR	140321S1	NON-STORET			1993
		WILLOWEMOC CR IN ROSCOE @ CO RD 124 BR	14033101	NON-STORET	41 55 49	74 54 55	1994
		BEAVER KILL 1.5 MI DS ROSCOE-QUINNIPIAC R & W CONN	14F03001	WQMON	41 56 45	74 55 17	
	MONGAUP RIVER BASIN						
		MIDDLE MONGAUP RIVER NYS MILE PT. - 4.75	14 2081	WQMON	41 46 26	74 44 19	
		MONGAUP RIVER IN MONGAUP @ RT 97 BR	140111S1	NON-STORET	41 25 36	74 45 22	1993
		MIDDLE MONGAUP RIV IN FERNDALE @ CO RD 17 BR	14012205	NON-STORET	41 46 25	74 44 20	1968
	NEVERSINK RIVER BASIN						
		NEVERSINK RIVER AT NYS MILE PT. - 8.5	14 1030	WQMON	41 26 28	74 36 7	
		NEVERSINK RIVER AT NYS MILE PT. - 9.9	14 1036	WQMON	41 27 20	74 36 2	
		BASHER KILL AT NYS MILE PT. - 0.6	1402020	WQMON	41 27 44	74 35 9	
		NEVERSINK RIV IN PORT JERVIS @ MAIN ST (RT 6) BR	14021001	WQMON	41 21 40	74 41 7	1987
		NEVERSINK RIV IN GODEFFROY @ GRAHAM RD BR	14021008	NON-STORET	41 26 17	74 36 6	1994
		NEVERSINK RIV IN BRIDGEVILLE @ RT 17 BR	14021026	NON-STORET	41 38 10	74 38 0	1986
		NEVERSINK RIV IN WOODBURNE @ RT 52 BR	140210S1	NON-STORET	41 45 35	74 36 0	1993
		NEVERSINK RIV IN NEVERSINK @ GAGE/COVERED BR	140210S2	NON-STORET			
		BASHER KILL IN MOUNT HOPE @ GALLEY HILL RD BR	140221S1	NON-STORET	41 27 14	74 35 22	1993
	WEST BRANCH BASIN						
		WEST BRANCH DELAWARE RIVER NYS MILE PT. - 9.5	140080	WQMON	42 0 10	75 23 15	
		WEST BRANCH IN HANCOCK @ RT 191 BR	14041001	WQMON	41 57 9	75 17 30	1994
		WEST BRANCH IN HALE EDDY @ CO RD 56 BR	14041010	NON-STORET	42 0 11	75 23 2	1988

AGENCY	SUB-WATERSHED	STATION DESCRIPTION	SITE NUMBER	TYPE	LATITUDE	LONGITUDE	LAST SAMPLED
		WEST BRANCH IN HAWLEYS @ CO RD 26 BR	14041048	NON-STORET	42 10 30	75 1 4	1994
		WEST BRANCH IN DELANCEY @ BAGLEY BROOK RD BR	14041051	NON-STORET	42 12 29	74 58 35	1988
		OQUAGA CREEK IN DEPOSIT @ GAGE	140421S1	NON-STORET			1994
		LITTLE DELAWARE RIVER IN DELHI @ THOMPSON CROSS RD	140422S1	NON-STORET	42 15 8	74 54 5	1993
Pennsylvania Department of Environmental Resources							
	BRODHEAD CREEK BASIN						
		BRODHEAD CR PR191 BRIDGE NEAR ANALOMINK	WQN0138	WQMON	41 2 7	75 12 45	1994
		BRODHEAD CREEK AT SR2028 (LR45061) BR	WQN137	WQMON	40 59 55	75 8 35	1994
	BUSHKILL CREEK BASIN						
		BUSHKILL CR AT TT 523 BRIDGE	WQN0139	WQMON	41 5 17	75 2 17	1994
		LITTLE BUSHKILL CREEK AT T305 BR AT BUSHKILL	WQN181	WQMON	41 5 51	75 0 15	1994
	DELAWARE RIVER						
		DEL RIV AT US6 & 209 BR AT PORT JERVIS NY	WQN0103	WQMON	41 22 14	74 41 52	1972
		DEL RIV NEAR LORDSVILLE	WQN0174	WQMON	41 52 3	75 12 54	1988
		DEL RIV NEAR DEL WATER GAP	WQN176	WQMON	40 58 42	75 8 12	1994
		DEL RIV AT SR1020 (LR63027) BR NEAR CALLICOON, NY	WQN185	WQMON	41 45 54	75 3 12	1994
	LACKAWAXEN RIVER BASIN						
		LACKAWAXEN RIVER AT PARK ST BRIDGE IN WHITE MILLS	WQN0140	WQMON	41 31 30	75 12 19	1987
		LACKAWAXEN RIVER AT PR590 AT BRIDGE	WQN0147	WQMON	41 29 16	74 59 22	1994
	WEST BRANCH BASIN						
		WEST BRANCH AT PR 191 BRIDGE IN BUCKINGHAM TWP	WQN0104	WQMON	41 57 5	75 17 30	1994
ennsylvania Fish and Boat Commission							
	DELAWARE RIVER						
		DEL RIV -DAMASCUS - SANDTS EDDY(walleye & sm bass)		NON-STORET			1994
		DEL RIV (near West Branch)	ALFWQN104	WQMON	41 58 8	75 17 30	
	DINGMANS CREEK BASIN						
		DINGMANS CREEK (trout population survey)		NON-STORET			1994
	RAYMONDSKILL CREEK BASIN						
		RAYMONDSKILL CREEK (trout population survey)		NON-STORET			1994
	SHOHOLA CREEK BASIN						
		SHOHOLA CREEK (trout population survey)		NON-STORET			1994
	TOMS CREEK BASIN						
		TOMS CREEK (trout population survey)		NON-STORET			1994
ie County Conservation District							
	ADAMS CREEK BASIN						
		ADAMS CR APPROX. 5' DS FROM SR 2001	07	NON-STORET	41 15 38	74 53 12	1993
	BUSH KILL (in Millrift)						
		BUSH KILL CR(MILLRIFT) APPROX 10' US OF BR ON T549	12	NON-STORET	41 24 34	74 44 34	1993
	BUSHKILL CREEK BASIN						
		SAW CREEK APPROX 10' DS FROM BR ON WINONA FALLS RD	01	NON-STORET	41 5 24	75 2 23	1993
		BUSHKILL CR APPROX 100' US OF CONF W/L BUSHKILL CR	02	NON-STORET	41 5 24	75 0 20	1993
		L BUSHKILL APPROX. 50' US OF CONF W/BUSHKILL CR	03	NON-STORET	41 5 28	75 0 14	1993
		SAW CREEK APPROX 20' US DISCHARGE (STONEY HOLLOW)	06S	NON-STORET	41 6 5	75 2 23	1993
		L BUSKILL APPROX. 5' US DISCHARGE (POCMONT RESORT)	16S	NON-STORET	41 7 13	75 0 15	1993
	CRAWFORD BRANCH BASIN						
		CRAWFORD BRANCH AT DEWA BOUNDARY	19S	NON-STORET	41 19 35	74 46 22	1993

AGENCY	SUB-WATERSHED	STATION DESCRIPTION	SITE NUMBER	TYPE	LATITUDE	LONGITUDE	LAST SAMPLE
	CUMMINS CREEK BASIN						
		CUMMINS CR AT DEWA BOUNDARY	11	NON-STORET	41 20 36	74 45 38	1993
	DINGMANS CREEK BASIN						
		DINGMANS CR APPROX 20' US DISCHARGE(MARCEL LK EST)	05S	NON-STORET	41 15 8	74 57 26	1993
		DINGMANS CR APPROX. 10' UPSTREAM FROM SR 2001	06	NON-STORET	41 13 56	74 54 38	1993
	HORNBECKS CREEK BASIN						
		HORNBECKS CR APPROX 10' DS OF BRIDGE ON EMERY ROAD	05	NON-STORET	41 11 49	74 54 47	1993
	LACKAWAXEN RIVER BASIN						
		TEEDYUSKUNG CR APPROX 5' US PIPE(WOODLOCH SPRINGS)	01S	NON-STORET	41 28 56	75 5 58	1993
		WALLENPAUPACK CR APPRX 5' US DISCHARGE(THE ESCAPE)	02S	NON-STORET	41 21 40	75 18 6	1993
		LACKAWAXEN R APPROX. 20' DS FROM BRIDGE ON RT 590	15	NON-STORET	41 29 13	74 59 28	1993
		E BR WALLENPAUPACK APPR 10' US DIS (PROMISED LAND)	15S	NON-STORET	41 19 6	75 14 28	1993
		WALLENPAUPACK CR APPROX 10' DS OF BRIDGE ON RT 507	17	NON-STORET	41 18 50	75 18 54	1993
		E BR WALLENPAUCK CR APPROX 30' DS OF BR ON RT 507	18	NON-STORET	41 19 18	75 18 32	1993
	MASTHOPE CREEK BASIN						
		MASTHOPE CR APPROX. 1 MILE US FROM CONF W/ DEL RIV	16	NON-STORET	41 32 25	75 2 1	1993
	RAYMONDSKILL CREEK BASIN						
		RAYMONDSKILL CR APPROX. 10' DS FROM SR 2009	08	NON-STORET	41 18 7	74 51 23	1993
	SAWKILL CREEK BASIN						
		SAWKILL CR. BELOW WALKWAY BRIDGE OFF 51025	07SB	NON-STORET	41 20 50	74 52 59	1993
		SAWKILL CR UNDER RT 209 BRIDGE	09	NON-STORET	41 19 3	74 48 0	1993
	SHOHOLA CREEK BASIN						
		BIRCHY CR BEHIND PUMP STATION #2 (LAKE ADVENTURE)	04S2	NON-STORET	41 20 14	75 0 5	1993
		BIRCHY CR BEHIND PUMP STATION #3 (LAKE ADVENTURE)	04S3	NON-STORET	41 20 22	75 0 23	1993
		SHOHOLA CR APPROX. 5' ABOVE EFFLUENT (TRAILS END)	09S	NON-STORET	41 23 11	74 57 2	1993
		SHOHOLA CR APPROX. 2.5 MI US FROM CONF W/ DEL RIV	14	NON-STORET	41 27 12	74 55 21	1993
		BILLINGS CR ADJACENT TO PIKE COUNTY JAIL SITE	18S	NON-STORET	41 23 28	75 4 43	1993
	TOMS CREEK BASIN						
		TOMS CR APPROX. 10' DS FROM SR 2001	04	NON-STORET	41 9 4	74 57 14	1993
	TWIN LAKES CREEK BASIN						
		TWIN LAKES CR 20' DS CONF W/WALKER LAKE CR ON T446	13	NON-STORET	41 25 52	74 53 21	1993
	VANDERMARK CREEK BASIN						
		VANDERMARK CR APPROX. 50' US FROM MOUTH	10	NON-STORET	41 19 23	74 47 45	1993
US Environmental Protection Agency, Region II							
	EAST BRANCH BASIN						
		BEAVER KILL-WILLOWEMOC CK. TOWN OF ROCKLAND	74BK01	WQMON	41 54 20	74 49 4	1974
		BEAVER KILL-WILLOWEMOC CK. TOWN OF ROCKLAND	74BK03	WQMON	41 54 53	74 49 56	1974
		BEAVER KILL-WILLOWEMOC CK. TOWN OF ROCKLAND	74BK05	WQMON	41 55 34	74 52 32	1974
		BEAVER KILL-WILLOWEMOC CK. TOWN OF ROCKLAND	74BK06	WQMON	41 56 12	74 54 56	1974
		BEAVER KILL-WILLOWEMOC CK. TOWN OF ROCKLAND	74BK07	WQMON	41 56 12	74 54 56	1974
		BEAVER KILL-WILLOWEMOC CK. TOWN OF COLCHESTER	74BK08	WQMON	41 57 53	74 54 26	1974
		BEAVER KILL-WILLOWEMOC CK. TOWN OF ROCKLAND	74BK09	WQMON	41 56 14	74 55 32	1974
		BEAVER KILL-WILLOWEMOC CK. TOWN OF COLCHESTER	74BK10	WQMON	41 57 24	74 56 39	1974
		BEAVER KILL-WILLOWEMOC CK. TOWN OF COLCHESTER	74BK11	WQMON	41 56 47	74 58 46	1974
		BEAVER KILL-WILLOWEMOC CK. TOWN OF COLCHESTER	74BK12	WQMON	41 58 20	75 1 2	1974
		BEAVER KILL-W CK.IN ROCKLAND, LIVINGSTON MANOR STP	74BKWRP01	WQMON	41 54 26	74 50 0	1974

AGENCY	SUB-WATERSHED	STATION DESCRIPTION	SITE NUMBER	TYPE	LATITUDE	LONGITUDE	LAST SAMPLED
		BEAVER KILL-WILLOWEMOC CK. IN ROCKLAND, ROSCOE STP	74BKWRP02	WQMON	41 56 3	74 55 14	1974
	NEVERSINK RIVER BASIN						
		NEV RIV IN TOWN OF FALLSBURG, BRIDGE AT WOODBURNE	74BK03	WQMON	41 55 38	74 50 31	1974
		NEV RIV IN DEER PARK, ROUTE 209 BRIDGE	74NR13	WQMON	41 27 21	74 36 3	1974
		NEV RIV IN DEER PARK, GALLEY RD BR OVR BASHER KILL	74NR14	WQMON	41 27 14	74 35 22	1974
		NEVERSINK RIVER, GRAHAM ROAD BRIDGE	74NR15	WQMON	41 26 27	74 36 7	1974
		NEV RIV IN DEER PARK, GRAHAM RD BRDG AT GODEFFROY	74NR16	WQMON	41 24 24	74 38 4	1974
		NEV RIV IN DEER PARK, NEV DR BRIDGE AT HUGENOT	74NR17	WQMON	41 22 43	74 40 25	1974
		NEVERSINK RIVER US OF PORT JERVIS STP ON EAST BANK	74NR18	WQMON	41 21 50	74 40 50	1974
		NEVERSINK RIVER IN PORT JERVIS AT ROUTE 6 BRIDGE	74NR19	WQMON	41 21 10	74 41 8	1974
		NEVERSINK RIVER MOUTH AT LAUREL CEMETERY	74NR20	WQMON	41 21 24	74 41 42	1974
	WEST BRANCH BASIN						
		WEST BRANCH AT STAMFORD STP OLD BRIDGE NEAR	73WBD02	WQMON	42 24 8	74 37 39	1973
		WEST BRANCH AT ROUTE 10 (EPA STA WBDR4)	73WBD03	WQMON	42 23 30	74 38 25	1973
		WEST BRANCH AT ACCESS AREA ABOVE HOBART AT FISH	73WBD04	WQMON	42 22 53	74 39 30	1973
		WEST BRANCH AT HOBART STP OFF ROUTE 10 ABOVE	73WBD05	WQMON	42 22 19	74 40 42	1973
		WEST BRANCH OFF RT 10 BELOW HOBART	73WBD06	WQMON	42 21 42	74 41 27	1973
		WEST BRANCH AT EPA STA WBDR6	73WBD08	WQMON	42 19 45	74 48 14	1973
		WEST BRANCH AT BLOOMVILLE OFF ROUTE 10 BELOW	73WBD09	WQMON	42 19 30	74 49 4	1973
		WEST BRANCH AT EPA STA WBDR8	73WBD10	WQMON	42 17 53	74 52 47	1973
		LITTLE DELAWARE (EPA STA WBDR10)	73WBD12	WQMON	42 15 36	74 55 44	1973
		LITTLE DELAWARE NEAR MOUTH	73WBD13	WQMON	42 15 28	74 55 41	1973
		WEST BRANCH AT DELHI STP OFF ROUTE 10 BELOW	73WBD15	WQMON	42 15 27	74 57 11	1973
		WEST BRANCH AT EPA STA WBDR12	73WBD19	WQMON	42 12 30	74 58 35	1973
		WEST BRANCH AT RIVER ROAD EAST (EPA STA WBDR13)	73WBD20	WQMON	42 10 31	75 1 3	1973
		WEST BRANCH AT EPA STA WBDR15	73WBD21	WQMON	42 10 0	75 7 49	1973
		WEST BRANCH DELAWARE RIVER ROAD SOUTH	73WBD22	WQMON	42 9 16	75 8 34	1973
		WEST BRANCH AT ROUTE 10 BRIDGE (EPA STA WPDR17)	73WBD24	WQMON	42 6 14	75 11 18	1973
		WEST BRANCH AT ROUTE 10 APEX. (EPA STA WBDR18)	73WBD25	WQMON	42 5 36	75 14 22	1973
		WEST BRANCH AT STAMFORD STP	73WBDP01	WQMON	42 24 14	74 37 42	1973
		WEST BRANCH AT PARNETT PACKING CO. STP	73WBDP07	WQMON	42 19 40	74 48 5	1973
		WEST BRANCH DELAWARE STATION 1	WBDR1	WQMON	42 25 38	74 37 4	1971
		WEST BRANCH DELAWARE STATION 10	WBDR10	WQMON	42 15 35	74 55 44	1971
		WEST BRANCH DELAWARE STATION 11	WBDR11	WQMON	42 14 33	74 57 54	1971
		WEST BRANCH DELAWARE STATION 12	WBDR12	WQMON	42 12 29	74 58 36	1971
		WEST BRANCH DELAWARE STATION 12A	WBDR12A	WQMON	42 11 44	74 59 19	1971
		WEST BRANCH DELAWARE STATION 13	WBDR13	WQMON	42 10 31	75 1 4	1971
		WEST BRANCH DELAWARE STATION 14	WBDR14	WQMON	42 9 19	75 6 43	1971
		WEST BRANCH DELAWARE STATION 15	WBDR15	WQMON	42 10 0	75 7 50	1971
		WEST BRANCH DELAWARE STATION 16	WBDR16	WQMON	42 7 43	75 9 42	1971
		WEST BRANCH DELAWARE STATION 17	WBDR17	WQMON	42 6 16	75 11 19	1971
		WEST BRANCH DELAWARE STATION 18	WBDR18	WQMON	42 5 38	75 14 22	1971
		WEST BRANCH DELAWARE STATION 19	WBDR19	WQMON	42 5 21	75 18 46	1971
		WEST BRANCH DELAWARE STATION 2	WBDR2	WQMON	42 24 17	74 37 35	1971

AGENCY	SUB-WATERSHED	STATION DESCRIPTION	SITE NUMBER	TYPE	LATITUDE	LONGITUDE	LAST SAMPLED
		WEST BRANCH DELAWARE STATION 20	WBDR20	WQMON	42 4 18	75 23 33	1971
		WEST BRANCH DELAWARE STATION 21	WBDR21	WQMON	42 3 40	75 24 56	1971
		WEST BRANCH DELAWARE STATION 22	WBDR22	WQMON	42 0 12	75 23 3	1971
		WEST BRANCH DELAWARE STATION 23	WBDR23	WQMON	41 57 8	75 17 31	1971
		WEST BRANCH DELAWARE STATION 3	WBDR3	WQMON	42 23 30	74 38 27	1971
		WEST BRANCH DELAWARE STATION 4	WBDR4	WQMON	42 22 15	74 40 24	1971
		WEST BRANCH DELAWARE STATION 5	WBDR5	WQMON	42 20 37	74 43 12	1971
		WEST BRANCH DELAWARE STATION 6	WBDR6	WQMON	42 19 45	74 48 14	1971
		WEST BRANCH DELAWARE STATION 7	WBDR7	WQMON	42 18 37	74 50 21	1971
		WEST BRANCH DELAWARE STATION 8	WBDR8	WQMON	42 17 54	74 52 48	1971
		WEST BRANCH DELAWARE STATION 9	WBDR9	WQMON	42 16 41	74 54 46	1971
US Environmental Protection Agency, Region III, MAHA Program							
	BRODHEAD CREEK BASIN						
		PARADISE CR IN MOUNT POCONO, PA	PA751S	NON-STORET	41 6 3	75 16 1	1994
		MCMICHAEL CR IN SAYORSBURG, PA	PA775S	NON-STORET	40 55 53	75 20 2	1994
	BUSHKILL CREEK BASIN						
		MUD POND RUN IN PROMISED LAND, PA	PA537S	NON-STORET	41 15 35	75 10 23	1994
	LACKAWAXEN RIVER BASIN						
		BRIDGE CR IN NEWFOUNDLAND, PA (WALLENPAUPACK TRIB)	PA774S	NON-STORET	41 18 27	75 16 56	1994
	SLATEFORD CREEK BASIN						
		SLATEFORD CR IN PORTLAND, PA	PAR17S	NON-STORET	40 56 43	75 7 17	1994
US Environmental Protection Agency, Regions II & III							
	DELAWARE RIVER						
		DEL RIV BELO XING OF RD OFF ST HWY 10	3605H1	WQMON	42 4 0	75 23 46	1973
	LACKAWAXEN RIVER BASIN						
		WALLENPAUPACK CR @ RT 6 BR .5 MI N OF WILSONVILLE	4229A1	WQMON	41 27 40	75 10 55	1974
		WALLENPAUPACK CR AT BANK .3 MI E OF LEDGEDALE	4229A2	WQMON	41 22 2	75 19 14	1974
		MILL BK AT PA RT 507 BRDG .5 MI NW MT BAY AIRSTRIP	4229B1	WQMON	41 23 14	75 14 25	1974
		KLEINHANS CR AT PA RT 507 BRDG 1.5 MI E OF PALMYRA	4229C1	WQMON	41 21 30	75 16 15	1974
		UNNAMED CR AT PA HWY 507 BRDG IN PALMYRA	4229D1	WQMON	41 22 15	75 15 10	1974
		SPINNERBROOK @ RD 63112 BR .8 MI SE OF JCT HWY 590	4229H1	WQMON	41 26 30	75 13 28	1974
	MONGAUP RIVER BASIN						
		UNNAMED CR AT BANK OF LGT DUTY RD NEAR GRAVEL PITS	3636B1	WQMON	41 45 30	74 48 30	1973
		UNNAMED CR AT BANK OFF RD OUT OF TOWN OF SWAN LAKE	3636D1	WQMON	41 45 0	74 47 0	1973
		UNNAMED STREAM AT CO HWY 142 BRDG	3636F1	WQMON	41 45 0	74 47 0	1973
		KINNE BROOK AT STARLIGHT RD BRDG	3637A1	WQMON	41 38 0	74 46 30	1973
		WHITE LAKE BROOK AT BRDG .5 MI E OF MOUNTAIN LAKE	3637B1	WQMON	41 39 30	74 48 0	1973
		MONGAUP RIVER AT ST HWY 17B	3637C1	WQMON	41 40 0	74 47 0	1973
		BURNT MEADOW BROOK AT STARLIGHT RD BRDG	3637D1	WQMON	41 37 0	74 46 30	1973
		SACKETT LAKE BROOK AT STARLIGHT RD BR DS OF STP	3637E1	WQMON	41 35 30	74 46 30	1973
		WEST BRANCH @ BLUM RD BRDG BELO SWAN LAKE STP	3637F1	WQMON	41 43 0	74 47 30	1973
		WEST BRANCH @ HWY 55 BRDG ABOV SWAN LAKE STP	3637F2	WQMON	41 45 0	74 47 0	1973
		WHITE LK BROOK @ RT 17 BR ABOVE KAUNEOGA LAKE STP	3637G1	WQMON	41 41 30	74 49 50	1973
		WHITE LK BROOK @ RT 17 BRDG DS KAUNEOGA LAKE STP	3637G2	WQMON	41 40 30	74 49 0	1973
		MIDDLE BRANCH @ ST HWY 52 ABOVE LIBERTY STP	3637H1	WQMON	41 47 30	74 44 0	1973

AGENCY	SUB-WATERSHED	STATION DESCRIPTION	SITE NUMBER	TYPE	LATITUDE	LONGITUDE	LAST SAMPLED
		MIDDLE BRANCH @ BRDG IN FERNDALE BELO STP	3637H2	WQMON	41 46 30	74 44 30	1973
	WEST BRANCH BASIN						
		WEST BRANCH AT ST HWY 10 2.5 MI SW OF WALTON	3605A1	WQMON	42 7 30	75 9 30	1973
		SHERRUCK BROOK AT MED DUTY RD BRDG (Cannonsville)	3605C1	WQMON	42 9 30	75 17 30	1973
		TROUT CREEK AT BULLOCK HILL RD BRDG	3605E1	WQMON	42 10 30	75 17 0	1973
		MAXWELL BROOK AT DRYDEN HILL BRDG	3605F1	WQMON	42 6 30	75 15 0	1973
		DRYDEN CREEK NEAR DRYDEN RD BRDG	3605G1	WQMON	42 7 0	75 15 0	1973
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	ADAMS CREEK BASIN						
		ADAMS CR NR DINGMANS FERRY, PA	01438760	WQMON	41 14 21	74 52 0	1973
	BEAVERDAM CREEK BASIN						
		BEAVERDAM CREEK AT DAMASCUS, PA.	01427600	WQMON	41 42 12	75 4 7	1967
	BRODHEAD CREEK BASIN						
		MILL CREEK AT MOUNTAINHOME, PA, 1.5 MI US MOUTH	01440300	GAGE	41 8 9	75 13 10	1988
		BRODHEAD CREEK NEAR ANALOMINK, PA	01440400	GAGE	41 4 56	75 13 4	1994
		BRODHEAD CREEK NEAR ANALOMINK, PA	01440400	WQMON	41 5 5	75 12 54	1963
		BRODHEAD CREEK NEAR ANALOMINK, PA	01440650	WQMON	41 2 7	75 12 45	1976
		MCMICHAELS CREEK AT STROUDSBURG, PA	01441000	GAGE	40 58 47	75 11 59	1988
		MCMICHAELS CREEK AT STROUDSBURG, PA	01441000	WQMON	40 58 45	75 12 5	1975
		POCONO CR NEAR STROUDSBURG, PA	01441500	WQMON	40 59 10	75 13 35	1988
		BRODHEAD CREEK AT MINISINK HILLS, PA	01442500	GAGE	40 59 55	75 8 35	1992
		BRODHEAD CREEK AT MINISINK HILLS, PA	01442500	WQMON	40 59 55	75 8 35	1976
		MARSHALLS CR AT MINISINK HILLS, PA	01442600	WQMON	40 59 50	75 8 25	1988
	BUSH KILL (in Millrift)						
		BUSH KILL AT MILLRIFT, PA	01433700	WQMON	41 24 30	74 44 35	1967
	BUSHKILL CREEK BASIN						
		BUSHKILL CREEK AT SHOEMAKERS, PA	01439500	GAGE	41 5 17	75 2 17	1994
		BUSH KILL AT SHOEMAKERS, PA	01439500	WQMON	41 5 17	75 2 17	1980
		LITTLE BUSHKILL CR AT BUSHKILL, PA	01439680	WQMON	41 5 52	75 0 15	1973
		LITTLE BUSHKILL CR AT BUSHKILL, PA	01439700	WQMON	41 5 30	75 0 10	1988
	CALKINS CREEK BASIN						
		N BR CALKINS CREEK NEAR MILANVILLE, PA	01427650	GAGE	41 40 8	75 3 35	
		CALKINS CREEK AT MILANVILLE, PA	01427700	WQMON	41 40 10	75 4 10	1988
	CALLICOON CREEK BASIN						
		CALLICOON CREEK AT CALLICOON, NY	01427500	GAGE	41 45 39	75 2 55	1982
	CHERRY CREEK BASIN						
		CHERRY CR AT DELAWARE WATER GAP, PA	01442700	WQMON	40 58 45	75 9 40	1967
	CONASHAUGH CREEK BASIN						
		CONASHAUGH CR NR DINGMANS FERRY, PA	01438140	WQMON	41 16 16	74 50 54	1973
		CONASHAUGH CR NR DINGMANS FERRY, PA	01438740	WQMON	41 16 16	74 50 54	1973
	CUMMINS CREEK BASIN						
		CUMMINS CR NEAR MILFORD, PA	01438200	WQMON	41 20 40	74 45 41	1973
	DELAWARE RIVER						
		DELAWARE RIVER AT LORDVILLE, NY	01427207	NON-STORET	41 52 2	75 12 51	1992
		DELAWARE RIVER AT BRIDGE AT LORDVILLE, PA	01427220	WQMON	41 52 3	75 12 54	1976
		DELAWARE RIVER NR CALLICOON, NY	01427405	WQMON	41 46 14	75 0 50	1975

AGENCY	SUB-WATERSHED	STATION DESCRIPTION	SITE NUMBER	TYPE	LATITUDE	LONGITUDE	LAST SAMPLED
		DELAWARE RIVER AT CALLICOON, NY	01427510	GAGE	41 45 23	75 3 47	1994
		DELAWARE RIVER AT CALLICOON, NY	01427510	NON-STORET	41 45 23	75 3 47	1992
		DELAWARE RIVER AT NARROWSBURG, NY	01427750	WQMON	41 36 34	75 3 44	1975
		DEL RIV ABOVE LACKAWAXEN RIVER NEAR BARRYVILLE, NY	01428500	GAGE	41 30 28	74 59 10	1994
		DEL RIV ABOVE LACKAWAXEN RIVER NEAR BARRYVILLE, NY	01428500	WQMON	41 30 28	74 59 10	1992
		DELAWARE RIVER AT BARRYVILLE, NY	01432160	WQMON	41 28 31	74 54 46	1992
		DELAWARE RIVER AT POND EDDY, NY	01432805	NON-STORET	41 26 20	74 49 11	1992
		DELAWARE RIVER AT PORT JERVIS, NY	01434000	GAGE	41 22 14	74 41 50	1994
		DELAWARE RIVER AT PORT JERVIS, NY	01434000	WQMON	41 22 14	74 41 50	1992
		DELAWARE RIVER AT MONTAGUE, NJ	01438500	GAGE	41 18 30	74 47 50	1994
		DELAWARE RIVER AT MONTAGUE, NJ	01438500	WQMON	41 18 30	74 47 50	1994
		DELAWARE RIVER AT DINGMANS FERRY, PA	01439000	GAGE	41 13 13	74 51 48	
		DELAWARE RIVER AT DINGMANS FERRY, PA	01439000	WQMON	41 13 12	74 51 40	1984
		DELAWARE RIVER AT EAST STROUDSBURG, PA	01440090	WQMON	41 2 40	75 1 42	1979
		DEL RIV BELOW TOCKS IS NEAR DELAWARE WATER GAP	01440200	GAGE	41 0 31	75 4 58	1994
		DEL RIV BELOW TOCKS IS NEAR DELAWARE WATER GAP	01440200	WQMON	41 0 31	75 4 58	1980
		DELAWARE RIVER AT DUNNFIELD, NJ	01442750	GAGE	40 58 8	75 8 0	
		DELAWARE RIVER AT DUNNFIELD NJ	01442750	WQMON	40 58 40	75 8 10	1976
		DELAWARE RIVER AT PORTLAND, PA	01443000	GAGE	40 55 26	75 5 46	1994
	DINGMANS CREEK BASIN						
		DINGMANS CR AT DINGMANS FERRY, PA	01438900	WQMON	41 13 30	74 52 50	1973
	EAST BRANCH BASIN						
		DRY BROOK NEAR SEAGER, NY	01413265	WQMON	42 3 31	74 32 25	1986
		DRY BROOK AT MAPLEDALE NEAR ARKVILLE, NY	01413270	WQMON	42 6 27	74 33 41	1986
		EAST BRANCH DELAWARE AT MARGARETVILLE, NY	01413500	GAGE	42 8 36	74 39 6	1992
		EAST BRANCH DELAWARE AT MARGARETVILLE, NY	01413500	WQMON	42 8 36	74 39 6	1986
		PLATTE KILL TRIB (WINTER HOLLOW) AT NEW KINGSTONNY	01413920	WQMON	42 12 53	74 40 53	1985
		PLATTE KILL AT DUNRAVEN, NY	01414000	GAGE	42 7 47	74 41 23	1962
		PLATTE KILL AT DUNRAVEN, NY	01414000	WQMON	42 7 47	74 41 23	1960
		MILL BROOK NEAR BELLE AYR, NY	01414285	WQMON	42 3 56	74 35 18	1986
		MILL BROOK TRIBUTARY #1 NEAR ARENA, NY	01414290	WQMON	42 4 43	74 37 31	1986
		MILL BROOK NEAR DUNRAVEN, NY	01414500	GAGE	42 6 22	74 43 51	1992
		MILL BROOK NEAR DUNRAVEN, NY	01414500	WQMON	42 6 22	74 43 51	1971
		TREMPER KILL NEAR ANDES, NY	01415000	GAGE	42 5 13	74 50 2	1992
		TREMPER KILL NEAR ANDES, NY	01415000	WQMON	42 5 13	74 50 2	1960
		TERRY CLOVE KILL NR PEPACTON, NY	01415500	GAGE	42 7 50	74 53 59	1962
		TERRY CLOVE KILL NR PEPACTON, NY	01415500	WQMON	42 7 50	74 53 59	1960
		FALL CLOVE KILL NR PEPACTON, NY	01416000	GAGE	42 6 45	74 53 55	1943
		COLES CLOVE KILL NEAR PEPACTON, NY	01416500	NON-STORET			1953
		EAST BRANCH DELAWARE AT DOWNSVILLE, NY	01417000	GAGE	42 4 30	74 58 36	1992
		EAST BRANCH DELAWARE AT DOWNSVILLE, NY	01417000	WQMON	42 4 30	74 58 36	1975
		EAST BRANCH DELAWARE AT HARVARD, NY	01417500	GAGE	42 0 56	75 7 21	1992
		EAST BRANCH DELAWARE AT HARVARD, NY	01417500	WQMON	42 0 56	75 7 21	1960
		BEAVER KILL NR TURNWOOD, NY	01418000	GAGE	42 2 4	74 43 54	1959

AGENCY	SUB-WATERSHED	STATION DESCRIPTION	SITE NUMBER	TYPE	LATITUDE	LONGITUDE	LAST SAMPLED
		BEAVER KILL NR TURNWOOD, NY	01418000	WQMON	42 2 4	74 43 54	1992
		BEAVER KILL AT CRAIGIE CLAIR, NY	01418500	GAGE	41 57 35	74 52 11	1970
		BEAVER KILL AT CRAIGIE CLAIR, NY	01418500	WQMON	41 57 35	74 52 11	1969
		BEAVER KILL AT ROSCOE	01418600	GAGE	41 56 11	74 55 13	
		WILLOWEMOCK CREEK AT DEBRUCE, NY	01419000	NON-STORET			1952
		WILLOWEMOCK CREEK NEAR LIVINGSTON MANOR, NY	01419500	GAGE	41 53 59	74 48 35	1970
		WILLOWEMOCK CREEK NEAR LIVINGSTON MANOR, NY	01419500	WQMON	41 53 59	74 48 35	1967
		LITTLE BEAVER KILL NEAR LIVINGSTON MANOR, NY	01420000	GAGE	41 52 23	74 47 52	1981
		LITTLE BEAVER KILL NEAR LIVINGSTON MANOR, NY	01420000	WQMON	41 52 23	74 47 52	1960
		LITTLE BEAVER KILL AT LIVINGSTON	01420030	GAGE	41 54 1	74 49 43	
		WILLOWEMOCK CREEK AT ROSCOE	01420484	GAGE	41 55 49	74 54 54	
		WILLOWEMOCK CREEK AT STAT	01420486	GAGE	41 56 2	74 55 14	
		BEAVER KILL AT COOKS FALLS, NY	01420500	GAGE	41 56 47	74 58 58	1992
		BEAVER KILL AT COOKS FALLS, NY	01420500	WQMON	41 56 47	74 58 58	1992
		BEAVER KILL AT EAST	01420900	GAGE	41 59 21	75 7 48	
		EAST BRANCH DELAWARE AT FISHES EDDY, NY	01421000	GAGE	41 58 23	75 10 28	1994
		EAST BRANCH DELAWARE AT FISHES EDDY, NY	01421000	WQMON	41 58 23	75 10 28	1992
		EAST BRANCH DELAWARE IN HANCOCK, NY	01421500	GAGE	41 57 10	75 16 37	1913
		EAST BRANCH DELAWARE IN HANCOCK, NY	01421500	WQMON	41 57 10	75 16 37	1987
		EAST BROOK NEAR TREADWELL, NY	01422737	WQMON	42 16 15	75 3 2	1986
	FLATBROOK BASIN						
		LITTLE FLATBROOK AT PETERS VALLEY, NJ	01439920	WQMON	41 11 54	74 50 10	1963
		FLATBROOK NEAR FLATBROOKVILLE, NJ	01440000	GAGE	41 6 24	74 57 9	1994
		FLATBROOK NEAR FLATBROOKVILLE, NJ	01440000	WQMON	41 6 24	74 57 9	1993
	HOLLISTER CREEK BASIN						
		HOLLISTER CREEK NEAR ABRAHAMSVILLE, PA	01427400	WQMON	41 46 5	75 5 6	1967
	HORNBECKS CREEK BASIN						
		HORNBECKS CR NR DINGMANS FERRY, PA	01439100	WQMON	41 11 23	74 53 4	1973
	LACKAWAXEN RIVER BASIN						
		WEST BRANCH LACKAWAXEN RIVER NEAR ALDENVILLE, PA	01428750	NON-STORET	41 40 28	75 22 35	1992
		W. BR. LACKAWAXEN R. AT ALDENVILLE, PA	01428800	WQMON	41 38 38	75 21 36	1988
		W. BR. LACKAWAXEN RIVER AT PROMPTON, PA	01429000	GAGE	41 35 14	75 19 38	1992
		W. BR. LACKAWAXEN RIVER AT PROMPTON, PA	01429000	NON-STORET	41 35 14	75 19 38	1992
		DYBERRY CREEK NEAR HONESDALE, PA (W. BR. TRIB)	01429500	GAGE	41 36 26	75 16 3	1992
		LACKAWAXEN RIVER NEAR HONESDALE, PA	01430000	GAGE	41 33 43	75 14 54	1992
		LACKAWAXEN RIVER AT	01430500	GAGE	41 28 11	75 11 23	
		MIDDLE CREEK NEAR HAWLEY, PA	01431000	GAGE	41 29 5	75 13 20	
		LACKAWAXEN RIVER AT HAWLEY, PA	01431500	GAGE	41 28 34	75 10 21	1994
		LACKAWAXEN RIVER AT HAWLEY, PA	01431500	WQMON	41 28 34	75 10 21	1980
		WEST BR WALLENPAUPACK CREEK NR HAMLIN, PA	01431650	WQMON	41 22 25	75 23 28	1969
		WALLENPAUPACK CREEK AT LEDGEDALE, PA	01431670	WQMON	41 22 4	75 19 10	1975
		ARIEL CREEK NEAR LEDGEDALE, PA	01431673	NON-STORET	41 22 26	75 19 15	1992
		MILL BROOK NEAR PAUPACK (LAKE WALLENPAUPACK TRIB)	01431680	GAGE	41 23 15	75 14 20	
		PURDY CREEK AT LAKEVILLE, PA	01431685	NON-STORET	41 25 41	75 16 8	1992
		WALLENPAUPACK CREEK AT WILSONVILLE, PA	01432000	GAGE	41 27 33	75 11 8	1992

AGENCY	SUB-WATERSHED	STATION DESCRIPTION	SITE NUMBER	TYPE	LATITUDE	LONGITUDE	LAST SAMPLED
		WALLENPAUPACK CREEK AT WILSONVILLE, PA	01432000	WQMON	41 27 33	75 11 8	1963
		BLOOMING GROVE CREEK NEAR ROWLAND, PA	01432100	WQMON	41 28 0	75 4 35	1980
	LITTLE EQUINUNK CR BASIN						
		LITTLE EQUINUNK CREEK AT STALKER , PA	01427300	WQMON	41 49 30	75 7 15	1980
	MASTHOPE CREEK BASIN						
		MASTHOPE CREEK AT MASTHOPE, PA	01428200	WQMON	41 32 15	75 1 40	1980
	MONGAUP RIVER BASIN						
		MONGAUP RIV @ MONGAUP 300' DS HYDROELECTRIC PLANT	01433500	GAGE	41 27 41	74 45 33	1994
		MONGAUP RIV @ MONGAUP 300' DS HYDROELECTRIC PLANT	01433500	WQMON	41 27 41	74 45 33	1975
	NEVERSINK RIVER BASIN						
		EAST BRANCH NEVERSINK RIVER NE OF DENNING, NY	0143400680	NON-STORET	42 58 1	74 26 54	1992
		EAST BRANCH NEVERSINK RIVER, E OF LADLETON, NY	01434013	NON-STORET	41 56 18	74 30 20	1992
		EAST BRANCH NEVERSINK RIVER NEAR CLARYVILLE, NY	01434017	NON-STORET	41 55 31	74 32 26	1992
		WEST BRANCH NEVERSINK NEAR FROST VALLEY, NY	01434021	NON-STORET	42 0 40	74 24 53	1992
		BISCUIT BROOK ABOVE PIGEON BROOK @ FROST VALLEY,NY	01434025	NON-STORET	41 59 43	74 30 5	1992
		HIGH FALLS BROOK AT FROST VALLEY, NY	01434105	NON-STORET	41 58 38	74 31 21	1992
		WEST BRANCH NEVERSINK RIVER NEAR CLARYVILLE, NY	01434176	NON-STORET	41 57 20	74 32 40	1992
		WEST BRANCH NEVERSINK RIVER AT CLARYVILLE, NY	01434498	NON-STORET	41 55 13	74 34 30	1992
		NEVERSINK RIVER AT CLARYVILLE, NY	01434500	NON-STORET			1951
		NEVERSINK RIVER NEAR CLARYVILLE, NY	01435000	NON-STORET	41 53 24	74 35 25	1992
		NEVERSINK RIVER AT NEVERSINK, NY	01436000	NON-STORET	41 49 12	74 38 9	1992
		NEVERSINK RIVER AT WOODBOURNE, NY	01436500	NON-STORET	41 45 24	74 35 52	1992
		NEVERSINK RIVER AT GODEFFROY, NY	01437500	GAGE	41 26 28	74 36 7	1992
		NEVERSINK RIVER AT GODEFFROY, NY	01437500	WQMON	41 26 28	74 36 7	1992
		NEVERSINK RIVER AT PORT JERVIS, NY	01438000	GAGE	41 21 40	74 41 7	1994
		NEVERSINK RIVER AT PORT JERVIS, NY	01438000	WQMON	41 21 40	74 41 7	1976
	RAYMONDSKILL CREEK BASIN						
		RAYMONDSKILL CR NR SILVER SPRING, PA	01438720	WQMON	41 17 40	74 50 48	1973
	SAWKILL CREEK BASIN						
		SAWKILL CR AT MILFORD, PA	01438395	WQMON	41 19 19	74 48 17	1974
	SHOHOLA CREEK BASIN						
		SHOHOLA CREEK NEAR SHOHOLA, PA	01432500	GAGE	41 27 35	74 55 11	1988
		SHOHOLA CREEK NEAR SHOHOLA, PA	01432500	WQMON	41 27 20	74 55 25	1960
	TENMILE RIVER BASIN						
		TENMILE RIVER AT TUSTEN, NY	01428000	GAGE	41 33 31	75 1 23	1973
		TENMILE RIVER AT TUSTEN, NY	01428000	WQMON	41 33 31	75 1 23	1971
	TOMS CREEK BASIN						
		TOMS CREEK AT EGYPT MILLS, PA	01439400	WQMON	41 7 33	74 57 20	1973
	TWIN LAKES CREEK BASIN						
		WALKER LAKE CREEK NEAR SHOHOLA, PA	01432600	WQMON	41 26 5	74 53 20	1967
	VANDERMARK CREEK BASIN						
		VANDERMARK CREEK AT MILFORD, PA	01438300	GAGE	41 19 3	74 47 33	1988
		VANDERMARK CREEK AT MILFORD, PA	01438300	WQMON	41 19 3	74 47 33	1973
	WEST BRANCH BASIN						
		WEST BRANCH AT STAMFORD WTP-TRAVIS ROAD	01421525	WQMON	42 25 36	74 37 10	1971
		WEST BRANCH AT REXMERE LAKE OUTLET AT STAMFORD, NY	01421548	WQMON	42 24 21	74 37 28	1971

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		WEST BRANCH AT STAMFORD, NY	01421550	WQMON	42 24 19	74 37 31	1971
		WEST BRANCH AT HOBART, NY	01421610	WQMON	42 22 16	74 40 16	1971
		TOWN BROOK AT HOBART, NY	01421620	WQMON	42 22 8	74 40 38	1971
		WEST BRANCH AT DELHI TREATMENT PLANT-STEEL BROOK	01421994	WQMON	42 17 31	74 55 54	1971
		WEST BRANCH DELAWARE AT DELHI, NY	01422000	GAGE	42 16 13	74 55 16	
		WEST BRANCH DELAWARE AT DELHI, NY	01422000	WQMON	42 16 13	74 55 16	1971
		LITTLE DELAWARE RIVER NEAR DELHI, NY	01422500	GAGE	42 15 0	74 53 59	1970
		LITTLE DELAWARE RIVER NEAR DELHI, NY	01422500	WQMON	42 15 0	74 53 59	1971
		WEST BRANCH DELAWARE RIVER NEAR HAMDEN, NY	01422700	WQMON	42 10 32	75 1 4	1967
		WEST BRANCH DELAWARE AT WALTON, NY	01423000	GAGE	42 9 43	75 8 24	1992
		WEST BRANCH DELAWARE AT WALTON, NY	01423000	WQMON	42 9 43	75 8 24	1986
		WEST BRANCH DELAWARE RIVER AT BEERSTON NY	01423010	WQMON	42 7 43	75 9 41	1975
		DRYDEN CREEK NEAR GRANTON, NY	01423500	GAGE	42 6 15	75 16 23	1967
		DRYDEN CREEK NEAR GRANTON, NY	01423500	WQMON	42 6 15	75 16 23	1960
		TROUT CREEK NEAR ROCK ROYAL, NY	01424000	GAGE	42 10 47	75 16 47	1967
		TROUT CREEK NEAR ROCK ROYAL, NY	01424000	WQMON	42 10 47	75 16 47	1967
		TROUT CREEK AT CANNONSVILLE, NY	01424500	GAGE	42 5 59	75 19 11	1963
		TROUT CREEK AT CANNONSVILLE, NY	01424500	WQMON	42 5 59	75 19 11	1960
		WEST BRANCH DELAWARE RIVER AT STILESVILLE, NY	01425000	GAGE	42 4 29	75 34 7	1992
		WEST BRANCH DELAWARE RIVER AT STILESVILLE, NY	01425000	WQMON	42 4 29	75 34 7	1992
		COLD SPRING BROOK AT CHINA, NY	01425500	GAGE	42 9 35	75 23 23	1968
		BUTLER BROOK AT DEPOSIT, NY	01425642	GAGE	42 3 40	75 25 12	1977
		BUTLER BROOK AT DEPOSIT, NY	01425642	WQMON	42 3 40	75 25 12	1975
		OQUAGA CREEK AT ARCTIC, NY	01425665	GAGE	42 11 5	75 25 27	
		OQUAGA CREEK AT ARCTIC, NY	01425665	WQMON	42 11 5	75 25 27	1975
		OQUAGA CREEK TRIBUTARY AT ARCTIC, NY	01425670	GAGE	42 10 56	75 25 16	
		OQUAGA CREEK TRIBUTARY AT ARCTIC, NY	01425670	WQMON	42 10 56	75 25 16	1975
		OQUAGA CREEK NEAR NORTH SANFORD, NY	01425675	GAGE	42 10 28	75 26 25	1981
		OQUAGA CREEK NEAR NORTH SANFORD, NY	01425675	WQMON	42 10 28	75 26 25	1981
		BONE CREEK AT DEPOSIT, NY	01425995	WQMON	42 3 34	75 25 48	1971
		OQUAGA CREEK AT DEPOSIT, NY	01426000	GAGE	42 3 35	75 25 47	1973
		OQUAGA CREEK AT DEPOSIT, NY	01426000	WQMON	42 3 31	75 25 42	1975
		WEST BRANCH DELAWARE AT HALE EDDY, NY	01426500	GAGE	42 0 10	75 23 2	1994
		WEST BRANCH DELAWARE AT HALE EDDY, NY	01426500	WQMON	42 0 10	75 23 2	1992
		BALLS CREEK NEAR WINTERDALE, PA	01426700	WQMON	41 58 0	75 20 10	1980
		WEST BRANCH DELAWARE AT HANCOCK, NY	01427000	GAGE	41 57 8	75 17 31	1913
		WEST BRANCH DELAWARE AT HANCOCK, NY	01427000	WQMON	41 57 8	75 17 31	1987